

DOCUMENT RESUME

ED 192 501

EC 130 163

AUTHOR Renzulli, Joseph S., Ed.: Stoddard, Elizabeth P.,
Ed.
TITLE Under One Cover: Gifted and Talented Education in
Perspective.
INSTITUTION Council for Exceptional Children, Reston, Va.
SPONS AGENCY National Inst. of Education (DHEW), Washington,
D.C.
REPORT NO ISBN-0-86586-108-0
PUB DATE 80
CONTRACT 400-76-3119
NOTE 229p.
AVAILABLE FROM The Council for Exceptional Children, Publication
Sales Unit, 1920 Association Dr., Reston, VA 22091
(\$11.25)

EDRS PRICE MF01/PC10 Plus Postage.
DESCRIPTORS Creativity: *Cultural Differences: *Curriculum:
Elementary Secondary Education: Exceptional Child
Research: Females: *Gifted: State of the Art Reviews:
*Student Characteristics: Success: *Talent: *Talent
Identification

ABSTRACT

Forty-three author contributed papers provide an overview of education for gifted and talented students. The following aspects are addressed (sample subtopics in parentheses): the identification continuum (teacher identification, behavior rating scales, implications for equality of educational opportunity); characteristics of the gifted (creativity in young science students, peer acceptance, creative young women); giftedness among the culturally different (incidence among ethnic groups, identifying achievement potential in minority group students); curriculum ideas (creative writing, reading skills); research in gifted education (attitudes of gifted students toward handicapped persons, statewide implementation of classroom practices); key ideas for successful programming for the gifted (successful teacher characteristics, value development); program descriptions (a preschool program for gifted/talented nonhandicapped and handicapped, an independent study seminar program, high school internships); and state of the art (need for increased federal effort, role of the arts and humanities).
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UNDER ONE COVER

GIFTED AND TALENTED EDUCATION IN PERSPECTIVE

Edited by

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University of Connecticut



A product of the
ERIC Clearinghouse on
Handicapped and Gifted Children
The Council for Exceptional Children

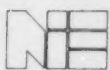
EC130163

A product of the ERIC Clearinghouse on Handicapped and Gifted Children.

Published in 1980 by The Council for Exceptional Children, 1920 Association Drive, Reston, Virginia 22091

Library of Congress Number 80-68284

ISBN 0-86586-108-0



This publication was prepared with funding from the National Institute of Education, US Department of Health, Education, and Welfare under contract no. 400-76-0119. Contractors undertaking such projects under government sponsorship are encouraged to express freely their judgment in professional and technical matters. Prior to publication the manuscript was submitted to The Council for Exceptional Children for critical review and determination of professional competence. This publication has met such standards. Points of view, however, do not necessarily represent the official view or opinions of either The Council for Exceptional Children, the National Institute of Education, or the Department of Education.

Printed in the United States of America.

Contents

Foreword	7
<i>Joseph S. Renzulli, Elizabeth P. Stoddard</i>	
I. The Identification Continuum	
Introduction	2
Issues in the Identification of the Gifted	4
<i>Ruth A. Martinson</i>	
Teacher Identification of Superior Students	8
<i>Joseph S. Renzulli, Robert K. Hartman, Carolyn M. Callahan</i>	
Scale for Rating Behavioral Characteristics of Superior Students	12
<i>Joseph S. Renzulli, Robert K. Hartman</i>	
Testing Those in the Top Percentiles	18
<i>Daniel P. Keating</i>	
Relativity and Giftedness: Implications for Equality of Educational Opportunity	20
<i>David H. Feldman, Joseph C. Bratton</i>	
Two Approaches to Identification of Gifted Students	21
<i>Joseph S. Renzulli, Linda H. Smith</i>	
II. Characteristics of the Gifted	
Introduction	30
Creativity in Young Science Students	32
<i>Clifford Pearce</i>	
A Study of School Attitudes, Peer Acceptance, and Personality of Creative Adolescents	38
<i>Kenneth A. Kurtzman</i>	
A Psychological Study of 10 Exceptionally Creative Adolescent Girls	44
<i>Charles E. Schaefer</i>	
Creative Young Women in Today's World	55
<i>E. Paul Torrance</i>	
Intellectual and Academic Characteristics of Fourth Grade Gifted and Pseudogifted Students	62
<i>Elmer Namy</i>	
III. Giftedness Among the Culturally Different	
Introduction	68
Reported Incidence of Giftedness Among Ethnic Groups	70
<i>Manfred Adler</i>	
Foundation for Exceptional Children Addresses the Needs of the Culturally Different Gifted Child	75
<i>June B. Jordan</i>	
Identifying Achievement Potential in Minority Group Students	79
<i>Thomas E. Grant, Joseph S. Renzulli</i>	
The Culturally Different Gifted Child—The Dawning of His Day?	84
<i>Irving S. Sato</i>	
IV. Curriculum Ideas for Gifted Education	
Introduction	90
Creative Writing and the Gifted Child	92
<i>Ernest Rowe</i>	
Introducing the Gifted Brief	96
<i>Marvin J. Gold</i>	
Extending Reading Skills into Today's World	100
<i>Wanda Rogers, Susan Ryan</i>	
Developing Multiple Talents in Exceptional Children	108
<i>C. June Maker</i>	

V. Research in Gifted Education	
Introduction	114
Teacher Retention of Stereotypes of Exceptionality	116
John Salvia, Gary M. Clark, James E. Ysseldyke	
Attitudes of Young Gifted Boys and Girls Toward Handicapped Individuals	118
Alfred L. Lazar, Russel E. Orpet, Virgil A. Revie	
Changing Attitudes of Young Mentally Gifted Children	
Toward Handicapped Persons	120
Alfred L. Lazar, Juliana T. Gensley, Russel E. Orpet	
Cognitive and Affective Patterns of Emphasis in Gifted and Average Illinois Classes	123
Joe Milan Steele, Ernest R. House, Stephen D. Lapan, Thomas Kerins	
Do Gifted Children Speak an Intellectual Dialect?	125
Julie M. Jensen	
Statewide Implementation of Classroom Practices for Superior Students	127
Ronald H. Fredrickson, John W. M. Rothney	
Varieties of Adolescent Creativity and the High School Environment	133
Herbert J. Walberg	
VI. Key Ideas for Successful Programing for the Gifted	
Introduction	140
Identifying Key Features in Programs for the Gifted	142
Joseph S. Renzulli	
Programing for the Gifted Child	147
Paul D. Plowman	
Successful Teachers of the Gifted	152
William E. Bishop	
Opinions of Gifted Students Regarding Secondary School Programs	161
Joseph P. Rice, George Banks	
Creativity and Intelligence: Research Implications for Equal Emphasis	
in High School	166
Vernon J. Damm	
Developing Values in Gifted Children	171
Joseph J. Walker	
VII. A Look at Some Programs	
Introduction	178
Their Classroom Is the World	180
Thomas P. Lake	
Identifying and Educating Gifted/Talented Nonhandicapped and	
Handicapped Preschoolers	185
Merle B. Karnes, Jane D. Bertschi	
A Decent Program in Science for Gifted Elementary Pupils	190
Virginia P. Ryder	
An Independent Study-Seminar Program for the Gifted	193
Ruth Martinson, David Hermanson, George Banks	
Challenging Gifted High School Seniors	198
Inez Husted, Pat Pisaneschi, Walter Barbe	
Executive High School Internships: A Boon for the Gifted and Talented	200
Sharlene P. Hirsch	
VIII. A View from the Bridge	
Introduction	204
Education of the Gifted and Talented	206
Harold Lyon	
The Education of Gifted and Talented Children: A Status Report	209
Patricia Bruce Mitchell, Donald K. Erickson	
The Arts and Humanities Come Alive for Gifted and Talented	214
Thomas P. Lake	
A Need for Increased Federal Effort for the Gifted and Talented	218
Jeffrey J. Zettel, Joseph Ballard	

Foreword

Education for gifted and talented students has generated an unprecedented amount of enthusiasm over the past 15 years. This trend can be illustrated by examining past issues of *Exceptional Children* and *TEACHING Exceptional Children*. While issues from 1960 to 1965 contained only a few scattered articles pertaining to gifted education, readers over the past 5 years have had access to the latest trends in research, curriculum materials, and program descriptions in almost every issue. Fifteen years ago gifted education held a tenuous position in special education; today some might consider it the "glamour child" of the field.

To let these valuable articles by leaders in gifted education lie dormant merely because they are dispersed throughout the many issues of *Exceptional Children* and *TEACHING Exceptional Children* would be a disservice to educators actively engaged in the field. Pulling the articles together "under one cover" serves several purposes. We now have an assembled, comprehensive collection of pertinent articles representing the latest surge in gifted education—categorically organized to serve as a superior resource for people with either a general or specific interest in gifted education, and capturing the essence of the gifted movement to help us understand "where we have been and where we are going."

We chose to organize the articles thematically, rather than chronologically, for several reasons. First, it is sad but true that many of us hold on to the naive notion that "old is wrong and new is good." With this kind of limited perspective, readers might immediately jump to the last chapter, skipping over the "wrong" to read about the "good," if the book were arranged chronologically. Second, a categorical organization not only preserves the developmental perspective, but also adds a second dimension. By arranging the articles thematically, we can see, for instance, the emergence of a greater concern for culturally different gifted children and the various methods to be used in the identification of and programming for such children. Finally, a thematic format is the most practical in terms of information retrieval, since most persons are interested in a particular issue relating to gifted education.

A glance at the Table of Contents provides an overview of the themes included in this collection. While some themes, such as those presented in the identification and programing sections, are standard parts of every book dealing with gifted education, others, such as the research or programs in action chapters, provide rather unique collections. In the first section, "The Identification Continuum," the authors wrestle with the age old questions of "Who are the gifted and how do we find them?" Although there is much rhetoric about multiple talents and multiple criteria for identification, the sad fact remains that most students participating in special programs are preselected for time periods of at least 1 year and in most cases the major criterion for selection is a predetermined cutoff score of 125 or 130 on an intelligence test. If this is going to continue to be the case, one might wonder why these authors have not given up on broadening the concept of gifted, but thank goodness they have not. The wide range of "Characteristics of the Gifted" discussed in the second section further serves to illustrate the endless controversy about identification of gifted and talented students.

The third section provides a particularly interesting perspective. An initial recognition of "Giftedness Among the Culturally Different" in the first article, which was originally published in 1967, develops into identification and programing practices in the more recent contributions to the literature. The evidence of growth illustrated by this set of readings serves as a verification of the great strides education has made over the past 15 years.

"Curriculum Ideas for Gifted Education" presents another area where the rationale underlying special programs needs to be reexamined. Bloom's *Taxonomy of Educational Objectives* (1956) and Guilford's *Structure of the Intellect* (1967) model are almost universally offered as the rationale for special programs. If we examine these models carefully, however, two conclusions

emerge. First, the models point out mental processes that should be developed in all children, and second, the models impose a large amount of rigidity on learning activities. While an in-depth discussion of the implications of those conclusions is not appropriate here, it is critical that educators reexamine the base on which special programs have been established.

Toward that end, there is a natural lead-in to the fifth section, "Research in Gifted Education." Once the need to develop a defensible rationale for the practices of gifted education has been established, the directions for new research are clearly defined. It is evident that current methods of research limit the scope of our endeavors and prevent us from making progress on issues of greater significance. What remains to be seen is whether educational researchers will be willing to loosen their reins on the rigid statistical procedures to which they so vehemently cling, thereby allowing meaningful research to be conducted.

The next two sections, "Key Ideas for Successful Programing for the Gifted" and "A Look at Some Programs," provide a natural transition from theory to practice. Some words about programs in action from the teachers and directors who make them happen is a refreshing change of pace from the extensive discussion of the "larger and very necessary issues."

The closing section, "A View from the Bridge," provides an opportunity to hear what others have to say about where we have been and where we are going. Since that was one of the major reasons for compiling this outstanding group of articles, we find it an appropriate place to conclude.

Joseph S. Renzulli
Elizabeth P. Stoddard
September 1980

I. The Identification Continuum

Introduction

Engage in a conversation with a noneducator on the topic of gifted education and within 3 minutes you will be faced with two of the most difficult questions encountered in the field: Who are the gifted and how do you identify them? These two questions have not always been so tough. Terman (1926) would have answered them as quickly as they had been asked: "the top one percent level in general intellectual ability, as measured by the Stanford Binet Intelligence Scale."

Since Terman first presented his unidimensional definition, society has undergone vast changes and as society has changed, so have our notions about the "gifts" we deem worthy of development. These changes can best be illustrated by the two major thrusts in gifted education the United States has witnessed in the past 60 years. The first thrust occurred in the 1930's as a direct result of Terman's work. In an effort to encourage special enrichment practices, federal money was poured into schools to initiate a multitude of programs for the academically gifted. In the early 1950's Tannenbaum (1972) surveyed 100 of those schools to learn about the practices of those programs that had endured. He found none in existence. Educators hypothesized that among the reasons for the failure of such programs was the sterile, IQ based definition of giftedness.

As the talents valued by the United States shifted toward the scientific arena during the Sputnik era, so did the concept of giftedness. Once again, millions of federal dollars were spent on education—this time to develop the talents of those children judged to be future leaders in the race to space. When the funds dried up and the programs for the gifted once again disappeared, educators took yet another look at the children they had selected as gifted and the process by which those determinations had been made. This time, the definition was criticized for recognizing only those children with abilities geared toward scientific achievement. Artistic, mechanical, and leadership abilities had been completely ignored. Any attempts to evaluate creative thinking aptitudes were virtually ineffective. Identification procedures also came under the gun for their biases against children from different cultural and economic backgrounds. Thus, the second defeat for gifted education in America was recorded.

Those responsible for the latest upsurge in gifted education (which surfaced in the mid-1960's) are trying desperately to avoid the mistakes of the first two eras. In their attempts to learn from the failures of the past, two separate schools of thought, occupying opposite ends of a continuum, have emerged. At one end there are those calling for "defensible identification procedures" in an effort to eliminate all accusations of biased selection processes. A matrix is used to illustrate the weighted scores from various standardized tests. The composite scores are then ranked and the top 5% are selected. On the other end of the spectrum sit those who totally discount test scores and select their students exclusively on teacher, parent, peer, or self nominations to be followed by interviews and a trial admission to the program. All along the continuum the battle rages.

The following selection of readings presents various perspectives along those battlelines. Martinson addresses some of the major arguments she hears in opposition to her call for "complete individualized testing and case studies." While Martinson feels the arguments leveled at group testing are often justified, she maintains that when identification is done on an individual, case by case basis, many of the drawbacks are eliminated. In the next article, Renzulli, Hartman, and Callahan provide a rationale for the Scale for Rating Behavioral Characteristics of Superior Students (SRBCSS), which follows. The procedures used to develop and verify the scale are described. The instrument was "designed to obtain teacher estimates of a student's characteristics in the areas of learning, motivation, creativity, and leadership."

Keating discusses the statistical problems associated with "Testing Those in the Top Percentiles" and offers some suggestions to overcome these difficulties. The major dilemma in using

traditional instruments to delineate among higher scoring students is the lack of ceiling available on most standardized tests.

Feldman and Bratton describe their study, which was designed to "test the extent to which an increase in the number of acceptable criteria of giftedness would affect the composition" of the selected group. As they expected, a larger number of students were accepted when a wider range of criteria were considered. Feldman and Bratton conclude their article with a number of questions raised by their findings.

In the final article, Renzulli and Smith compare the more traditional selection procedures with the case study approach in terms of time, cost effectiveness, and usefulness of information gathered. Their findings are significant and the implications profound in light of the questions that have been raised on the identification issue.

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Issues in the Identification of the Gifted

Abstract: The need to identify gifted children through careful and complete individual tests and case studies somehow has not been accepted. Four general categories of concern appear to inhibit such identification procedures: (a) inadequacy of existing measures, (b) variability of intelligence, (c) cost of identification and special programs, and (d) establishment of a meritocracy. Identification of gifted children and provision of appropriate programs for them would maximize each child's potential for intellectual development, and untold benefits would accrue to both the individuals and society.

In the field of education, we occasionally indulge in curiously anomalous behavior. We subscribe to the belief that education of children with exceptional learning needs must be based upon complete knowledge of their capabilities. Then we insist on complete case studies and individual examinations in the identification of all children with special learning needs except for one group: the gifted. Within the latter group, we somehow have not accepted the necessity for careful and complete individual tests and case studies. The trend has been, instead, to use shortcuts, group measures of dubious value, teacher nomination, and an almost frenetic effort to include sundry unvalidated measures in the hope that they will add to our understanding of all of the unknown dimensions of the intellect.

The literature on identification of the gifted appears in frequent pronouncements which seem to sort themselves into four general categories of concern. These are (a) concern about the inadequacy of existing measures; (b) concern about the variability, or assumed variability, of intelligence; (c) concern about the high cost of identification and programs; and (d) concern about the establishment of a meritocracy.

Inadequate Measures

The criticisms of IQ measures rather typically refer to the limitations of a single measure. The critics have by implication equated the single IQ derived from group tests with the broader types of information which are available to us through the combined use of appropriate individual tests and case studies. The assumption seems to be that, even when we use individual examinations and the case study, we identify a person who performs narrowly in the direction of academic excellence. This assumption persists, despite the fact that any large scale study provides ample evidence to the contrary. The point that is made by those who criticize tests on the basis of the narrowness of the IQ lies in the convergent nature of their own thinking, namely, that the test (meaning the group test, rather than the individual test) identifies only verbal and mathematical abilities. The view is then held that these are only two limited abilities among a potentially wide spectrum, instead of the plausible alternate view that the identification of verbal and mathematical abilities provides the basis for assessment of skills which reach into many, many academic subjects and many areas of human learning.

Criticisms have also been leveled at those who

purport to measure intelligence but whose instruments do not include adequate assessment of creativity. Studies have been done in which various tasks grouped together have been labeled measures of creativity. On the basis of these studies, the authors have claimed that the measures of creativity provide information of value beyond the narrowness of intelligence tests. Persons who have conducted studies to measure creativity have been critical of the narrow concept of intelligence held by those who use intelligence tests which have been with us for some years, but which, to them, are no longer of value.

With the studies of Getzels and Jackson, Torrance, and others, a great swell of reaction against intelligence tests as a means for designating gifted children arose, and much of this reaction is still with us. After the thorough and systematic evaluations of these studies by persons like de Mille and Merrifield and Robert Thorndike, in which numerous necessary questions were raised, initial enthusiasm was replaced with more sober consideration.

A recent book of Wallach and Kogan (1965) starts with a summary of evaluative studies on the question of intelligence and/or creativity, which is a substantial contribution to a final state of sobriety and augurs well for more careful reporting in future studies of human abilities. In their evaluation, Wallach and Kogan point out that the indices of creativity possess little relationship to one another. They point out further that no evidence exists for a single unified dimension labeled creativity, similar to the concept of *g* or general intelligence. The analysis of a number of studies has shown consistently and without exception that the creativity tests relate more strongly to a standard intelligence index than they relate to one another.

The assumption that creativity is not related to intelligence is unwarranted on the basis of all evidence to date. Much controversy has occurred because of premature claims that certain tests were measures of creativity and by the implication that these measures, unvalidated though they may be, should replace the measures we now have.

A third criticism of existing measures has been raised regarding the failure of intelligence

tests to identify the culturally disadvantaged. This has largely been the result of the use of group measures, rather than of individual tests. As Goslin (.963) points out, individual tests such as the Stanford-Binet have had extremely limited use with relatively few children in our school systems, despite the fact that it is considered by many to be the most accurate available measure. The criticisms which are made, then, are of *group* tests, which fail to assess the abilities of various lower strata socioeconomic groups and certain bilingual groups.

We thus find articles such as one in the January, 1966, Newsletter of the Council of State Directors of Programs for the Gifted which complain that there are no known measures to assess ability of children who speak Hawaiian pidgin, and that children are given intelligence tests involving reading on which they do poorly and thus fail to qualify for remedial help, although they have the potential for improvement. A typical and oft quoted comment of Allison Davis is that half the ability of this country goes down the drain because of the failure of intelligence tests to measure the real mental ability of children from the lower socioeconomic groups and because of the failure of the schools to recognize and train this ability (Sexton, 1961).

We all accept the validity of this charge. It is probable that Davis's criticism is conservative and that the loss is even higher than 50 percent. In the California state study, if group tests had been used instead of individual tests, over half of the gifted population would have been lost. Some of the gifted had group IQ's as low as 100, because group tests, as demonstrated elsewhere, lack items which are appropriate for the identification of gifted young people (Martinson and Lessinger, 1962). If thorough studies and continuing search utilizing individual tests and complete study could be the rule among the disadvantaged, we would find, as has been found in several studies, that the disadvantaged population also includes large numbers of gifted children.

Variability of Intelligence

The second general issue frequently mentioned in connection with the identification of the gifted is the variability of intelligence. In much

of the literature which has its grandparenthood really in the nature-nurture controversy, we read of individuals who have grown up in impoverished environments and who have been given certain educational advantages which have resulted in dramatic changes in intelligence. The Iowa studies of an earlier day were the precursors of present day studies, such as the Higher Horizons project and similar efforts dealing with younger children. In cases of extreme environmental deprivation and severe language impoverishment, these differences do exist and should be accounted for by any skilled school psychologist.

Longitudinal studies sometimes are cited to demonstrate the mutability of intelligence from early childhood to adulthood. Variability does exist, but the basic reasons usually are not made clear. Bloom (1964) has pointed out that intelligence measured at age one does have a zero correlation with intelligence measured at age 17. However, by age 2 the correlation is .41, by age 4 the correlation with the measurement at age 17 has increased to .71, and by age 11 it has increased to .92. The reason for the variance is that the tests which are used in the study of infant development are largely motor and physical development tests, and these differ markedly in content from the tests based on cognitive skills and verbal abilities which are used at later ages. The differences at the two extremes are not particularly surprising when we realize that the measures differ.

Bloom (1964) points out in his text that, in the major longitudinal studies such as the Berkeley Study, the Brush Study in Cleveland, and the Fels Study, the data are consistently comparable in a way which suggests that general intelligence develops in an exceedingly lawful way. Intelligence is regarded as developmental and as increasingly stable from birth to young adulthood. By age 4, 50 percent of the variation in intelligence at age 17 is accounted for; and, barring extremes, the environment has relatively little effect on IQ change after the early school years.

High Cost of Identification

The third issue which is raised is the high cost for identification and for differentiated programs for the gifted. At the present time, very

few states provide funds for excess costs incurred by programs in this area. In one of the states where support is given, the funds are roughly one-fifth the amount recommended in a comprehensive study. In California, the current expenditure on the gifted amounts to less than five percent of the total expended on exceptional children in the state (California State Department of Education, 1966). It is less than two percent of the annual revenue from tobacco and alcohol taxes and about six percent of the annual tax on horse racing (Report of the Legislative Analyst, 1966).

The question in every state has too long been whether the adult population actually is interested in education of the high quality which should be available for gifted young people. The real question is whether these people are as entitled to appropriate education as are other youth with unusual learning needs.

The Issue of Meritocracy

The fourth issue is probably basic to difficulties which those persons interested in the gifted have encountered in their efforts to get adequate educational programs within the public schools. This issue is based on the question of whether the gifted should be identified for special consideration at all. The fear is expressed that special programs or provisions create a meritocracy or an elite within the school population.

It is extremely difficult to convince people of the need to provide adequate educational opportunities for those who do better than they do anyway. Despite abundant research evidence, it is also extremely difficult to convince people that appropriate opportunity for intellectual growth serves to produce better human beings. Persons who are given the opportunity to grow optimally live better with other human beings. The waste of human talent which comes from apathy is understood by very few among us. The loss from wasted talent suffered by all of humanity is understood by still fewer.

The four issues arise because of a basic lack of willingness by many to accept the real meaning of individual differences and to assume the obligations based on such recognition. The notion that some individuals are brighter than others is unpalatable, and the notion that some

persons are more capable of successful performance than others is rejected. The rejection of intelligence tests and the view of intelligence as environmentally developed is more acceptable to many. Thus the conclusion is that tests are not necessary and that, given the same environment, all persons have an equal opportunity to win. Such an idea has wide appeal. It falls flat, however, when we observe wide variations of ability within single families where opportunities presumably are highly similar.

More constructive than the elimination of tests is the use of individual tests and case studies to find and understand the educational needs of all gifted children, whatever their circumstances. Complete study should lead, in turn, to appropriate programs. A point of view (Hunt, 1961) often cited in reference to the disadvantaged but seldom cited in relation to the gifted is peculiarly appropriate as a fundamental premise:

It is highly unlikely that any society has developed a system of child-rearing and education that maximizes the potential of the individuals who compose it. Probably no individual has ever lived whose full potential for happy, intellectual interest and growth has been achieved (p. 346).

If we could adopt this point of view and offer consistent, appropriate opportunities to the

gifted people whom we identify, each child's potential for intellectual development would be maximized and untold benefits would accrue to both the individuals and to the society with which they have contact.

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Teacher Identification of Superior Students

Abstract: The need for a more structured approach to teacher judgment in the screening and identification of superior students is discussed, and a systematic procedure for constructing and using an instrument to guide subjective observation is described. The instrument focuses on behavioral characteristics in the areas of learning, motivation, creativity, and leadership and is offered as a supplementary method that can be used in conjunction with other identification procedures. Studies dealing with the reliability and validity of the instrument are described.

IN recent years a number of writers have called attention to a broadened conception of giftedness and the need for a wider range of criteria in the process of identifying gifted, talented, and creative youth (Getzels & Jackson, 1958; Jarecky, 1959; Witty, 1965). Although traditional tests of intelligence and achievement have been the major criteria for screening and selecting superior students, the role of teacher judgment is beginning to play an increasingly important part in efforts to place students in special educational programs that are designed to meet the needs of highly able youngsters (Cutts & Moseley, 1957; Pagnato & Birch, 1959).

In a comprehensive review of the literature dealing with the role of teacher judgment in the identification process, Gallagher (1966) pointed out some of the major weaknesses of teacher ratings. Be-

cause of the "frighteningly low level of effectiveness" of unstructured teacher judgment, Gallagher suggested a cautious approach to accepting teacher judgment as a basis for identification and concluded by saying that "most authorities would agree that teachers' opinions definitely need supplementing with more objective rating methods [p. 12]."

The development of the *Scale for Rating Behavioral Characteristics of Superior Students* (SRBCSS)* represents an attempt to provide a more objective and systematic instrument that can be used as an aid in guiding teacher judgment in the identification process. It is not intended to replace existing identification procedures such as measures of intelligence, achievement, and creativity; rather it is offered as a supplementary means that can be used in conjunction with other criteria for identification.

Procedures in the Development of the Scale

Initial "input" for the construction of the SRBCSS was derived from a comprehensive review of the literature dealing with characteristics or traits of superior students. Research studies relating to each

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* See Out of the Classroom Section, pp. 243.

From *Exceptional Children*, November 1971, pp. 211-214. Copyright © 1971 The Council for Exceptional Children.

of the four dimensions of the instrument were searched and categorized in an effort to isolate observable behavioral characteristics which were supported by common agreement among well known contributors to the literature. For a scale item to be included in the instrument, it was necessary that at least three separate studies had called attention to the importance of a given characteristic. These supportive studies are cited after each item in the scale.

The first experimental edition of the instrument was field tested in a number of school districts offering programs for gifted and talented students. Teachers and counselors completing the scale were asked to provide reactions about the effectiveness and usability of the instrument. Specifically, they were asked to make suggestions relating to clarity of expression, observability of traits, independence of items, and the ability of the instrument to make meaningful discriminations among students on each of the respective scales. This

information led to the construction of the present edition, which includes several revisions based on the valuable feedback provided by classroom teachers, counselors, and special program personnel.

A series of studies was conducted to obtain information about the reliability and validity of the SRBCSS. The stability of the instrument (test-retest reliability) and interjudge reliability were established by asking two sets of teachers to rate the same population of students after an interval of 3 months had elapsed. The students were enrolled in fifth and sixth grades and spent a portion of their time each day with the teachers who completed the rating scales.

As can be seen from Table 1, the stability of ratings over time and the consistency of ratings among judges appears to be quite high, and thus these data lend support to the reliability of the instrument.

An attempt was made to determine if the SRBCSS could sufficiently discriminate between groups of children who had been previously classified as "gifted" or "average." The teachers of two special classes for gifted fifth grade students and the teachers of two average fifth grades in the same school were asked to rate each of their students with the SRBCSS. These ratings and test information relating to the intelligence and achievement of the two groups are summarized in Table 2. Comparisons between the two groups were made by means of a one-way analysis of variance for each variable, and in every case a sig-

TABLE 1
Stability and Interjudge Reliability
Correlations for SRBCSS

Scale	Coefficient of stability (<i>N</i> = 78)	Interjudge reliability (<i>N</i> = 80)
Learning	.88**	.89**
Motivation	.91**	.85**
Creativity	.79**	.91**
Leadership	.77**	.67**

** $p < .01$

TABLE 2
Means, Standard Deviations, and Analysis of Variance Comparisons Between Gifted and Average Groups

Variable	Gifted group (<i>N</i> = 40)		Average group (<i>N</i> = 40)		<i>F</i>
	Mean	SD	Mean	SD	
SRBCSS scales:					
Learning	24.43	6.27	16.00	7.22	41.04**
Motivation	24.43	5.46	17.95	5.50	27.95**
Creativity	25.01	7.64	17.13	4.70	31.43**
Leadership	29.48	5.17	22.33	6.45	29.88**
IQ	136.90	4.73	108.93	9.66	270.55**
Language achievement	53.73	3.37	33.25	6.74	267.30**
Math achievement	43.80	3.93	31.98	7.88	103.41**
Total achievement	47.50	3.37	32.63	6.18	178.53**

** $p < .01$

TABLE 3
Correlations Between SRBCSS Scales and
Standardized Tests of Intelligence,
Achievement, and Creativity

Variable	Learning (N = 40)	Motivation (N = 40)	Creativity (N = 28)
Intelligence	.61**	.36*	—
Language			
achievement	.41**	.42**	—
Mathematics			
achievement	.57**	.60**	—
Total achievement	.46**	.50**	—
Verbal fluency	—	—	.37*
Verbal flexibility	—	—	.44*
Verbal originality	—	—	.48**
Figural fluency	—	—	.28
Figural flexibility	—	—	.29
Figural originality	—	—	.24
Figural elaboration	—	—	.29

* $p < .05$

** $p < .01$

nificant difference was found between the gifted and average groups.

A further attempt was made to determine the validity of the SRBCSS by comparing scores on the Learning and Motivation Scales with scores from standardized tests of intelligence and achievement and by comparing scores on the creativity scale with scores from the *Torrance Tests of Creative Thinking* (TTCT). These data are summarized in Table 3. The Learning and Motivation Scales correlate fairly well with measures that traditionally have been used to select students for academically oriented gifted programs. The Creativity Scale compares favorably with the verbal subscores of the TTCT; however, a low nonsignificant relationship was found between this scale and the nonverbal subscores of the TTCT. This finding reflects a verbal bias in the Creativity Scale items and suggests that caution should be exercised in using this scale to identify students for programs that emphasize nonverbal creativity.

The Leadership Characteristics Scale was validated by comparing teachers' ratings on the SRBCSS with peer ratings that were obtained through standard sociometric techniques (Hartman, 1969). These groups of students in grades 4, 5, and 6 were asked to rate their classmates on three hypothetical leadership situations in-

volving social, athletic, and intellectual skills. The results of this inquiry are presented in Table 4. The relatively high correlations for fourth and fifth graders indicate that teacher estimates of leadership ability based on the SRBCSS are in close agreement with students' perceptions of the leadership characteristics of their classmates. The somewhat lower correlations for sixth graders may be due to the fact that youngsters at this grade level tended to restrict their choices to classmates of the same sex.

TABLE 4
Correlations Between Sociometric Peer Ratings
and SRBCSS Leadership Ratings

Sociometric peer ratings	Grades		
	4 (N = 26)	5 (N = 23)	6 (N = 23)
Social	.80**	.80**	.35*
Athletic	.75**	.82**	.27
Intellectual	.83**	.77**	.29
Total	.83**	.84**	.23

* $p < .05$

** $p < .01$

Each item on the Leadership Characteristics Scale was further evaluated by comparing individual items with total leadership ratings. As shown in Table 5, the positive and generally high correlations for fourth and fifth graders tend to support

TABLE 5
Correlations Between Total SRBCSS Leadership
Ratings and Individual Scale Items

Individual items on SRBCSS leadership scale	Total SRBCSS leadership rating Grades		
	4 (N = 26)	5 (N = 23)	6 (N = 23)
1. Responsibility	.73**	.88**	.48*
2. Self confidence	.87**	.93**	.34
3. Popularity	.83**	.84**	.46*
4. Cooperativeness	.71**	.76**	.30
5. Verbal facility	.73**	.82**	.36*
6. Adaptability	.71**	.83**	.57**
7. Sociability	.64**	.73**	.53**
8. Dominance	.56**	.75**	.33
9. Social participation	.62**	.79**	.57**
10. Athletic ability	.63**	.70**	.61**

* $p < .05$

** $p < .01$

the internal consistency of the Leadership Scale at these grade levels. Although the correlations for sixth graders are somewhat lower, there is a clear positive relationship between individual items and the total leadership score.

Suggestions for Using the Scale

Teachers can use the SRBCSS most effectively by analyzing students' ratings on each of the four respective scales separately. The four dimensions of the instrument represent relatively different sets of behavioral characteristics, and therefore, no attempt should be made to add the subscores together to form a total score. Students can be rated any time during the school year; however, the earlier the observations are made, the more use can be made of the results in helping to identify and develop student abilities to the fullest. It is also valuable to obtain ratings from several teachers and counselors who are familiar with a youngster's performance.

Because of variations in student populations, methods of programing for superior students, and the availability of other data that can be used in the screening and identification process, it is impossible to provide the user with a predetermined set of cutoff scores for the scales. The instrument can be used most profitably by computing a mean score on each dimension for the total number of students who are being considered for enrollment in a special program. Those students who deviate markedly upward from the mean should be considered likely candidates for placement in a program or activity that is designed to enhance particular abilities; however, the reader is reminded that the instrument is offered as one means for guiding teacher judgment in the screening and identification process. Whenever possible, it should be used in conjunction with other instruments and techniques as part of a comprehensive system for the identification of superior students.

A guiding principle in using the SRBCSS emphasizes the relationship between a student's subscores and the types of curricular experiences that will be offered in a special program. Every effort should be made to capitalize on an indi-

vidual's strengths by developing learning experiences that take account of the area or areas in which the student has received high ratings. For example, a student who earns high ratings on the Motivational Characteristics Scale will probably profit most from a program that emphasizes self initiated pursuits and an independent study approach to learning. A student with high scores on the Leadership Characteristics Scale should be given opportunities to organize activities and to assist the teacher and his classmates in developing plans of action for carrying out projects.

In addition to looking at a student's profile of subscores for identification purposes, teachers can derive several useful hints for programing by analyzing student ratings on individual scale items. These items call attention to differences in behavioral characteristics and in most cases suggest the kinds of educational experiences that are most likely to represent the youngster's preferred method or style of learning. Thus, a careful analysis of scale items can assist the teacher in her efforts to develop an individualized program of study for each student.

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Scale for Rating Behavioral Characteristics of Superior Students

Joseph S. Renzulli/Robert K. Hartman

Name _____ Date _____

School _____ Grade _____ Age _____
Years Months

Teacher or person completing this form _____

How long have you known this child? _____ Months.

Directions. These scales are designed to obtain teacher estimates of a student's characteristics in the areas of learning, motivation, creativity, and leadership. The items are derived from the research literature dealing with characteristics of gifted and creative persons. It should be pointed out that a considerable amount of individual differences can be found within this population; and therefore, the profiles are likely to vary a great deal. Each item in the scales should be considered separately and should reflect the degree to which you have observed the presence or absence of each characteristic. Since the four dimensions of the instrument represent relatively different sets of behaviors, the scores obtained from the separate scales should not be summed to yield a total score. Please read the statements carefully and place an X in the appropriate place according to the following scale of values:

1. If you have *seldom or never* observed this characteristic.
2. If you have observed this characteristic *occasionally*.
3. If you have observed this characteristic to a *considerable degree*.
4. If you have observed this characteristic *almost all of the time*.

Space has been provided following each item for your comments.

Scoring. Separate scores for each of the three dimensions may be obtained as follows:

- Add the total number of X's in each column to obtain the "Column Total."
- Multiply the Column Total by the "Weight" for each column to obtain the "Weighted Column Total."
- Sum the Weighted Column Totals across to obtain the "Score" for each dimension of the scale.
- Enter the Scores below.

Learning Characteristics
Motivational Characteristics
Creativity Characteristics
Leadership Characteristics

Editor's Note: The procedures used in constructing and validating this instrument are discussed in an article which appears on page 211 of this issue of *Exceptional Children*. Readers who are interested in using this rating scale are hereby given permission to reproduce pages 243 to 248 in a limited number (100 or less) if the reprints are not to be sold for profit.

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Part I: Learning Characteristics

	1*	2	3	4
1. Has unusually advanced vocabulary for age or grade level; uses terms in a meaningful way; has verbal behavior characterized by "richness" of expression, elaboration, and fluency. (National Education Association, 1960; Terman & Oden, 1947; Witty, 1955)	☐	☐	☐	☐
2. Possesses a large storehouse of information about a variety of topics (beyond the usual interests of youngsters his age). (Ward, 1961; Terman, 1925; Witty, 1958)	☐	☐	☐	☐
3. Has quick mastery and recall of factual information. (Goodhart & Schmidt, 1940; Terman & Oden, 1947; National Education Association, 1960)	☐	☐	☐	☐
4. Has rapid insight into cause-effect relationships; tries to discover the how and why of things; asks many provocative questions (as distinct from informational or factual questions); wants to know what makes things (or people) "tick." (Carroll, 1940; Witty, 1958; Goodhart & Schmidt, 1940)	☐	☐	☐	☐
5. Has a ready grasp of underlying principles and can quickly make valid generalizations about events, people, or things; looks for similarities and differences in events, people, and things. (Bristow, 1951; Carroll, 1940; Ward, 1961)	☐	☐	☐	☐
6. Is a keen and alert observer; usually "sees more" or "gets more" out of a story, film, etc. than others. (Witty, 1958; Carroll, 1940; National Education Association, 1960)	☐	☐	☐	☐
7. Reads a great deal on his own; usually prefers adult level books; does not avoid difficult material; may show a preference for biography, autobiography, encyclopedias, and atlases. (Hollingworth, 1942; Witty, 1958; Terman & Oden, 1947)	☐	☐	☐	☐
8. Tries to understand complicated material by separating it into its respective parts; reasons things out for himself; sees logical and common sense answers. (Freehill, 1961; Ward, 1962; Strang, 1958)	☐	☐	☐	☐
Column Total	☐	☐	☐	☐
Weight	☐ 1	☐ 2	☐ 3	☐ 4
Weighted Column Total	☐	☐	☐	☐
Total	☐			

- *1—Seldom or never
 2—Occasionally
 3—Considerably
 4—Almost always

Part II: Motivational Characteristics

	1	2	3	4
1. Becomes absorbed and truly involved in certain topics or problems; is persistent in seeking task completion. (It is sometimes difficult to get him to move on to another topic.) (Freehill, 1961; Brandwein, 1955; Strang, 1958)	☐	☐	☐	☐
2. Is easily bored with routine tasks. (Ward, 1962; Terman & Oden, 1947; Ward, 1961)	☐	☐	☐	☐
3. Needs little external motivation to follow through in work that initially excites him. (Carroll, 1940; Ward, 1961; Villars, 1957)	☐	☐	☐	☐
4. Strives toward perfection; is self critical; is not easily satisfied with his own speed or products. (Strang, 1958; Freehill, 1961; Carroll, 1940)	☐	☐	☐	☐
5. Prefers to work independently; requires little direction from teachers. (Torrance, 1965; Gowan & Demos, 1964; Mokovic, 1953)	☐	☐	☐	☐
6. Is interested in many "adult" problems such as religion, politics, sex, race—more than usual for age level. (Witty, 1955; Ward, 1961; Chaffee, 1963)	☐	☐	☐	☐
7. Often is self assertive (sometimes even aggressive); stubborn in his beliefs. (Buhler & Guirl, 1963; Gowan & Demos, 1964; Ward, 1961)	☐	☐	☐	☐
8. Likes to organize and bring structure to things, people, and situations. (Ward, 1961; Gowan & Demos, 1964; Buhler & Guirl, 1963)	☐	☐	☐	☐
9. Is quite concerned with right and wrong, good and bad; often evaluates and passes judgment on events, people, and things. (Getzels & Jackson, 1962; Buhler & Guirl, 1963; Carroll, 1940)	☐	☐	☐	☐
Column Total	☐	☐	☐	☐
Weight	☐	☐	☐	☐
Weighted Column Total	☐	☐	☐	☐
Total				

Part III: Creativity Characteristics

	1	2	3	4
1. Displays a great deal of curiosity about many things; is constantly asking questions about anything and everything. (National Education Association, 1960; Goodhart & Schmidt, 1940; Torrance, 1962)	☐	☐	☐	☐
2. Generates a large number of ideas or solutions to problems and questions; often offers unusual ("way out"), unique, clever responses. (Carroll, 1940; Hollingworth, 1942; National Education Association, 1960)	☐	☐	☐	☐

3. Is uninhibited in expressions of opinion; is sometimes radical and spirited in disagreement; is tenacious. (Torrance, 1965; Gowan & Demos, 1964; Getzels & Jackson, 1962)	☐	☐	☐	☐
4. Is a high risk taker; is adventurous and speculative. (Getzels & Jackson, 1962; Villars, 1957; Torrance, 1965)	☐	☐	☐	☐
5. Displays a good deal of intellectual playfulness; fantasizes; imagines ("I wonder what would happen if. . ."); manipulates ideas (i.e., changes, elaborates upon them); is often concerned with adapting, improving, and modifying institutions, objects, and systems. (Rogers, 1959; Gowan & Demos, 1964; Getzels & Jackson, 1962)	☐	☐	☐	☐
6. Displays a keen sense of humor and sees humor in situations that may not appear to be humorous to others. (Torrance, 1962; Gowan & Demos, 1964; Getzels & Jackson, 1962)	☐	☐	☐	☐
7. Is unusually aware of his impulses and more open to the irrational in himself (freer expression of feminine interest for boys, greater than usual amount of independence for girls); shows emotional sensitivity. (Torrance, 1962; Rothney & Coopman, 1958; Gowan & Demos, 1964)	☐	☐	☐	☐
8. Is sensitive to beauty; attends to aesthetic characteristics of things. (Wilson, 1965; Witty, 1958; Villars, 1957)	☐	☐	☐	☐
9. Is nonconforming; accepts disorder; is not interested in details; is individualistic; does not fear being different. (Carroll, 1940; Buhler & Guiri, 1963; Getzels & Jackson, 1962)	☐	☐	☐	☐
10. Criticizes constructively; is unwilling to accept authoritarian pronouncements without critical examination. (Ward, 1962; Martinson, 1963; Torrance, 1962)	☐	☐	☐	☐
Column Total	☐	☐	☐	☐
Weight	☐	☐	☐	☐
Weighted Column Total	1	2	3	4
Total				

Part IV: Leadership Characteristics

	1	2	3	4
1. Carries responsibility well; can be counted on to do what he has promised and usually does it well. (Baldwin, 1932; Bellingrath, 1930; Burks, 1938)	☐	☐	☐	☐
2. Is self confident with children his own age as well as adults; seems comfortable when asked to show his work to the class. (Drake, 1944; Cowley, 1931; Bellingrath, 1930)	☐	☐	☐	☐
3. Seems to be well liked by his classmates. (Bellingrath, 1930; Garrison, 1935; Zeleny, 1939)	☐	☐	☐	☐
4. Is cooperative with teacher and classmates; tends to avoid bickering and is generally easy to get along with. (Dunkerly, 1940; Newcomb, 1943; Fauquier & Gilchrist, 1942)	☐	☐	☐	☐

5. Can express himself well; has good verbal facility and is usually well understood. (Simpson, 1938; Terman, 1904; Burks, 1938)	☐	☐	☐	☐
6. Adapts readily to new situations; is flexible in thought and action and does not seem disturbed when the normal routine is changed. (Eichler, 1934; Flemming, 1935; Caldwell, 1926)	☐	☐	☐	☐
7. Seems to enjoy being around other people; is sociable and prefers not to be alone. (Drake, 1944; Goodenough, 1930; Bonney, 1943)	☐	☐	☐	☐
8. Tends to dominate others when they are around; generally directs the activity in which he is involved. (Richardson & Hanawalt, 1943; Hunter & Jordan, 1939; Bowden, 1926)	☐	☐	☐	☐
9. Participates in most social activities connected with the school; can be counted on to be there if anyone is. (Zeleny, 1939; Link, 1944; Courtenay, 1938)	☐	☐	☐	☐
10. Excels in athletic activities; is well coordinated and enjoys all sorts of athletic games. (Flemming, 1935; Partridge, 1934; Spaulding, 1934)	☐	☐	☐	☐
Column Total	☐	☐	☐	☐
Weight	1	2	3	4
Weighted Column Total	☐	☐	☐	☐
Total				

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Testing Those in the Top Percentiles

Daniel P. Keating

To discover those few students who are operating at an exceptionally high level of ability in mathematics and quantitative sciences early in their academic careers (sixth through eighth grades), it is necessary to use more difficult tests than are normally administered in school testing programs. Tests at age-in-grade level are not usually appropriate. Often they lack sufficient ceiling for adequate evaluation of these students. More difficult tests provide the varied information not available from in-grade testing necessary for making the proper educational plans for these students.

When one is accustomed to dealing with the full range of scholastic aptitude measured by standardized tests, as most school personnel are, the idea that anything above the 98th or 99th percentile "doesn't really make any difference" is understandable but unjustifiable. If the goal of the schools is to provide the best possible educational alternatives to each individual, rather than to specifiable subgroups, then the distinctions even at this high level can be as important as in-grade testing.

Problems with In-Grade Tests

There are several reasons for the use of high level tests with gifted youngsters in educational as well as research settings. The first of these is that the students scoring at the 98th or 99th percentile on in-grade tests are likely to be as different from each other as the group as a whole is different from youngsters scoring at the 75th percentile. An example of this is a study of sixth graders nominated as gifted who took the Academic Promise Tests (1962) for the sixth through

ninth grades. A 99th percentile score on the numerical subscale for sixth graders was 40 or greater on a 60 item test. One student got 58 right, another 40. Both were at the 99th percentile on in-grade norms, but the same raw score difference of 18 between 40 and 22 was the difference between a 99th and a 65th percentile score.

Tests in-grade, however, rarely make these distinctions. In some cases the distinctions *could* be made on the basis of standardized tests in-grade, but more often such tests have too low a ceiling to separate these individuals accurately and reliably. The problem is especially acute if, as in some cases, the 98th and 99th percentile cutoff levels are only a few points below the ceiling of the test.

In such cases, errors of measurement are likely to lead to misclassification of a sizable number of high scorers. This results from the lower reliability of the test for those scoring near the ceiling, since the effective test length for them is much shorter.

Thus, within the confines of classical test theory, there are two major problems with using most in-grade tests with exceptionally gifted students, both connected to lack of ceiling:

1. The tests can give no indication of how such students are different from each other.
2. The tests cannot give an accurate estimate of an individual's ability if his true level is above the ceiling of the test.

An Adequately Difficult Test

Both of these objections can be overcome by using adequately difficult tests. Data from the Study of Mathematically and Scientifically Precocious Youth (SMSPY) illustrate this

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(Stanley, Keating, & Fox, 1974). Three mathematics competitions were held for seventh, eighth, and ninth grade students in Maryland in the years 1972 to 1974. The test used was the Scholastic Aptitude Test—Mathematical (SAT-M), which is normally given to high school seniors or juniors seeking college admission. A score of 540 on SAT-M is about the 78th percentile of male high school seniors; 620 is the 91st percentile; and the average Johns Hopkins freshman earns a 656. In Table 1 the distribution of SAT-M scores by sex and grade for each of the competitions is shown.

On the basis of these test results, the highest scoring students in each contest were offered the possibility of taking college courses while still in junior high school. Confirmation of the validity of these scores even for such young students was obtained. Thus far, 35 such students have taken college courses worth a total of 220 credits, earning a composite grade point average of 3.77 on a 4.0 scale.

Concluding Comments

The techniques described in this article for the discovery of quantitative precocity are of course applicable in other areas. The general

finding is that tests which are adequately scaled for a population defined by age and grade may not be the most useful for those near the top of the scale. This difficulty can be overcome by administering a higher level test to a select subpopulation on the basis of the first in-grade test. It should not be administered to the whole population, of course, because it would be both useless and discouraging for all but the top few. This simple procedure, which is both theoretically and practically justifiable, is often overlooked, even by those who most need the information to assist and counsel students.

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TABLE 1

Grouped frequency distribution of SAT-M scores by grade and sex for the 1972 (N=398), 1973 (N=667), and 1974 (N=1518) Maryland Mathematics Talent Searches

Subjects by grade and sex	N	Number of subjects for each score												Mean score	SD
		760- 800	710- 750	660- 700	610- 650	560- 600	510- 550	460- 500	410- 450	360- 400	310- 350	260- 300	210- 250		
1972															
7G	77	0	0	0	0	3	8	16	17	22	7	2	2	423	75
8G	96	0	0	0	0	11	24	20	14	14	7	3	3	458	88
7B	90	0	2	2	3	8	11	20	14	18	7	3	2	460	104
8B	133	2	3	13	18	20	21	19	17	13	6	1	0	528	105
1973															
7G	88	0	0	0	1	4	5	27	25	19	5	2	0	440	66
8G	158	0	0	0	13	24	49	46	21	5	0	0	0	511	63
7B	135	1	0	3	7	14	39	35	16	12	7	1	0	495	85
8B	286	4	10	14	37	73	70	44	21	11	1	1	0	551	85
1974															
7G	222	0	0	0	4	6	23	61	65	39	16	8	0	440	68
8G	369	0	0	7	22	52	90	116	42	33	6	1	0	503	72
7B	372	1	3	7	13	25	84	87	71	60	14	7	0	473	85
8B	556	0	12	32	76	114	130	119	47	20	5	1	0	540	82

Note. 7G = Seventh grade girls; 8G = Eighth grade girls (including accelerated ninth graders); 7B = Seventh grade boys; 8B = Eighth grade boys (including accelerated ninth graders).

Relativity and Giftedness: Implications for Equality of Educational Opportunity

David H. Feldman/Joseph C. Bratton

Currents of opinion within education and psychology are flowing more strongly toward a multiple or multidimensional conception of human talents and abilities. While it is true that research results have influenced both the content and direction of change, it is equally the case that demands for equal opportunity have had a profound effect on the rapidity with which change has occurred. Since any change in prevailing views of intellectual abilities will be judged according to its effects on equality of educational opportunity, the implications of multiple talents must be carefully investigated.

The study summarized here was intended to test the extent to which an increase in the number of acceptable criteria for giftedness would affect the composition of a hypothetical special program for gifted students. Investigators selected 18 different criteria, all of which have been used as criteria for giftedness, including the *California Achievement and Test of Mental Maturity* (CTMM), IQ tests, teachers' nominations, *Primary Mental Abilities*, music and art grades, and subscores from *Torrance's Tests of Creative Thinking*. Two fifth grade classes from a suburban Minneapolis school were administered the 18 measures, and the top five students on each measure were "selected" for the program. The number five was chosen somewhat arbitrarily, but five children did have CTMM IQ's of 130 or above, which is the typical cutoff point for many special programs for the gifted.

The hypothesis was that access to the program would be a function of the criterion selected. Specifically, it was predicted that some of the children would be selected by only one of the measures, that no child would be selected by all measures, and that 75 percent or more of the students would be selected by one or more of the measures. The results supported the hypotheses: seven students were selected on

the basis of a single criterion; no student was selected on all criteria (only four students were selected on more than half the criteria), and 92 percent of the students were selected on one or more criteria. Thus, depending on the criteria chosen, all but five of the students in the class could have been included in the hypothetical "special program for gifted students," while seven students would not have been chosen except on the basis of a single criterion.

There is, of course, a great temptation to write off the results of a study such as ours as "measurement error" or "random fluctuation." While such criticisms have some empirical validity, different children do benefit from special opportunities when different criteria are used as a basis for selection. (Recall that all 18 measures in the present study have previously been used as a basis for special program selection.)

While the results seem obvious, their implications are not, and they raise some difficult questions for the educational decision maker and the educational psychologist. How does one decide which criteria to emphasize, which criteria to eliminate, and how many and in what combination they should be employed? What does equality of educational opportunity mean when the criteria for outstanding abilities are so varied that they could include all children? Should the psychologist's role be to explain rather than decide among the many possibilities? These and other questions arising from a multiple or multidimensional conception of talent deserve careful attention and thorough investigation before de facto changes in practice make informed decisions impossible.

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Two Approaches to Identification of Gifted Students

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Abstract: This investigation compared the efficiency and effectiveness of traditional and case study approaches to the identification of academically gifted students in the elementary grades. Time and cost analyses were carried out, as was an examination of the usefulness of various types of information included in case study formats. The results suggest that the case study approach is generally superior to the traditional approach because of its consideration of multiple sources of information. The case study approach was effective in identifying gifted minority students and was found to be less costly and time consuming than others have suggested.

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ONE of the continuing concerns in programming for gifted students is the efficiency and effectiveness of various methods that are used in the identification process. Until recently, giftedness was viewed almost entirely in terms of high measured intelligence. Thus, comparative studies of identification procedures have traditionally used individual intelligence tests as the ultimate criterion measure for judging the efficiency and effectiveness of alternative approaches to identification (Pegnato & Birch, 1959; Martinson & Lessinger, 1960; Baldwin, 1962; Blosser, 1963). In recent years, however, giftedness has come to be viewed as a concept that is much broader than solely high intelligence (Renzulli, 1973; Gallagher, 1975; Sato, 1974). Consequently, a wider variety of identification procedures have been developed.

In view of this broadened conception of giftedness, the use of individual intelligence tests as the ultimate criterion in comparative studies is a questionable practice because it is obviously biased against identification procedures that do not rely heavily on measures of intelligence. The purpose of this study, therefore, was to compare two general approaches to identification using an alternative criterion measure to judge efficiency and effectiveness. The study also investigated the cost of the two approaches and the usefulness of certain types of information that are used in identification.

Description of Identification Procedures

Data from seven school districts that were initiating programs for gifted students in grades one, three, and five were gathered and analyzed in order to obtain basic information relating to the development of appropriate methods and techniques for identifying

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academically gifted students. Three of these school districts, referred to as Districts 1, 2, and 3, used what will be known in this article as the traditional approach. Essentially, this method consisted of (a) administering group ability tests to all students in the grades from which program participants would be selected and (b) administering an individual intelligence test to all students whose score was above a certain level on the group test.

The remaining four districts participating in the study used case study approaches as the main means for identifying program participants. Three of the case study approaches were adopted from formats developed in Florida, California, and Illinois, while the fourth district used a format that was developed by project personnel. These districts will be referred to as Districts 4, 5, 6, and 7, respectively.

Although the various case study approaches differ somewhat in the particular types of information and instruments that they include, most of the formats include data that can be classified into the following categories:

1. Information based on aptitude and/or achievement test scores.
2. Information based on ratings by present and/or past teachers.
3. Past performance information included in students' cumulative record folders.
4. Information based on parent ratings.
5. Information based on student self ratings.

The procedures for actually carrying out the case study approaches also tended to remain rather uniform from district to district. The required information on each child was gathered by professional and clerical personnel and then submitted to a selection committee for review and assessment.

Comparison of Efficiency

One of the major objectives of this study was to investigate the efficiency of various approaches to the identification of academically gifted students. Efficiency is defined as (a) the amount of time (in terms of professional and clerical staff/hours) that was devoted to identification activity and (b) the cost in dollars for carrying out these activities. An additional dimension of efficiency is concerned with the usefulness of particular types of information that were gathered for purposes of making selection decisions.

Time and Cost Analysis

Copies of an instrument entitled the *Log for Recording Preselection Activities* were provided to all persons involved in the identification process. These persons were requested to record their time according to a predetermined classification system that consisted of such tasks or activities as reviewing student records and compiling information, individual testing, group testing, and completing rating scales. Using salary and fringe benefit information that was entered in the logs, all time entries were multiplied by adjusted hourly pay rates.

The time and cost information derived from this procedure is summarized in Table 1. Inspection of this table reveals some interesting comparisons between the traditional and case study approaches. Although the traditional approach is supposed to be relatively mechanical (i.e., preselection is based on a group test cutoff score followed by an individual intelligence test), the authors note that there were small differences between the two approaches with regard to the amount of project teacher's time devoted to identification activity. In addition, a relatively large amount of administrator's time was spent in identification related activity in the districts using the traditional approach. As might be expected, time devoted to identification by regular classroom teachers and secretaries was significantly higher in most of the districts using the case study approach.

The total number of hours devoted to identification in the districts employing the traditional approach ranged from 305 hours to 455 hours; the mean for the three districts was 373 hours. A proportionate range was found when these figures were converted to dollar amounts. In the four districts using the case study approach, it can be seen that with the exception of District 7, there was also a fair amount of consistency in the number of hours expended on identification activities. The range in total hours was between 106 (District 5) and 151.75 (District 6), with costs being proportionate to the differences in hours.

As far as District 7 was concerned, the disproportionate amount of time devoted to identification activity was generally accounted for by the large number of hours recorded by school administrators. These individuals were responsible for developing a case study format prior to actually engaging in the screening and selection process. This devel-

TABLE 1
Summary of Time and Cost in Identifying Gifted Students by Means of Traditional and Case Study Approaches

Type of Approach	Project Teacher		Administrators		Secretaries		Teachers		State Psychologist		Total	
	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost
Traditional												
District 1	104.75	817.05	16.50	208.89	—	—	12.75	107.01	171.00	1710.00	305.00	2842.95
District 2	139.00	1615.18	16.00	201.44	—	—	72.05	584.65	132.00	320.00	359.00	3721.27
District 3	47.50	480.70	250.50	2677.34	26.00	49.40	5.00	37.45	126.00	1260.00	455.00	4504.39
Mean	97.08	970.78	94.33	1029.22	8.67	16.47	29.93	243.04	143.00	1430.00	373.00	3689.70
Case Studies												
District 4	109.50	1158.51	—	—	7.00	27.79	23.00	200.24	—	—	139.50	1386.54
District 5	66.00	620.40	4.25	50.31	—	—	35.75	319.29	—	—	106.00	990.00
District 6	53.25	626.75	16.25	224.40	35.00	160.53	47.25	406.36	—	—	151.75	1418.05
District 7	197.00	^a	482.75	^a	66.50	^a	148.50	^a	—	—	894.75	^a
Mean ^b	106.44	801.89	125.81	91.57	27.13	62.77	63.63	308.63	—	—	323.00	1244.65

^a Could not be calculated because information on salaries and overhead costs was not submitted.

^b Mean costs are calculated on the basis of three districts.

opmental activity, in addition to the involvement of a second school building (and therefore double administrator time in such activities as staff meetings, etc.), may explain why such a large amount of time was required for identification activity in District 7.

In an attempt to evaluate the efficiency of alternative approaches to identification, time and cost figures were analyzed in relation to the ratio between the total number of students who had been screened and selected. The word screened is used here to describe any youngsters for whom data had been gathered, regardless of whether or not that youngster was ultimately selected for the program. Table 2 presents a breakdown of the number of students screened, the number of students selected, the ratio between these two figures, and the cost and hours spent per selected student. Inspection of this table shows that the mean ratio of screened to selected students was slightly lower for those districts using the traditional approach. The significance of this difference is minimized however, when considering the relative cost of screening students using the traditional versus case study approach. Whereas the mean cost per screened student in the traditional districts was \$16.64, the average cost

for the case study districts in which information on salaries was submitted was only \$5.23.

Usefulness of Case Study Information

In an attempt to investigate the usefulness of various types of information that constitute the four case study formats, all selection committee members were asked to indicate the value of each type of data in making his or her individual decisions in selecting students for program participation. Following this rating, each committee member was asked to estimate the value or usefulness of each type of information in influencing the group decision making process (i.e., the decision of the selection committee as a whole).

In three of the four case study districts, scores on some type of intelligence or achievement test were rated as one of the most highly useful types of information in making selection decisions. In the fourth district (District 7) intelligence test scores received the lowest usefulness rating and achievement tests received the second lowest rating. This major discrepancy between District 7 and the other three case study districts may have been due in part to the fact that District 7 served a large

TABLE 2
Summary of Number of Students Screened and Selected as Gifted by Means
of Traditional and Case Study Approaches

Type of Approach	No. of students screened	No. of students selected	Ratio of screened to selected	Cost per selected student (in dollars)	Hours spent per selected student
Traditional					
District 1	225	31	7.26:1	91.70	9.84
District 2	220	24	9.17:1	155.05	14.96
District 3	221	40	5.53:1	112.62	11.38
Mean	222	31.67	7.32:1	119.79	12.06
Case studies					
District 4	217	25	8.68:1	55.46	5.58
District 5	308	28	11.00:1	35.36	3.79
District 6	233	45	5.18:1	31.51	3.37
District 7	267	51	12.29:1		17.54
Mean ^b	256.25	37.25	9.29:1	40.78	7.57

^a Could not be calculated because information on salaries and overhead costs was not submitted.

^b Mean costs are calculated on the basis of three districts.

proportion of minority group youngsters, and it is generally acknowledged that intelligence and achievement tests are not as valid for this group as they are for the population in general.

One type of information that was judged to be highly useful by a large number of selection committee members was ratings supplied by students' current teachers and information included in students' cumulative records or obtained through interviews with previous teachers. Health and family background information was judged to be of little value in making selection decisions, as was information supplied by parents through the use of questionnaires or rating scales. Peer nomination information, which was gathered in District 7, received the highest usefulness rating by individuals and was also considered to be the most influential type of information in helping the total group to arrive at decisions.

Comparison of Effectiveness

The second major area of inquiry in evaluating the identification process had to do with the effectiveness of the respective approaches. Effectiveness was concerned with whether or not the most appropriate selections were made in placing students into gifted programs. Since individually administered tests of intelligence constituted one of the identification approaches being evaluated, the criteria for effectiveness consisted of followup ratings by regular classroom teachers and project teachers. Ratings were based on the degree to which teachers thought students were appropriately placed.

The results of this inquiry are presented in Table 3. By comparing the proportions at the bottoms of the columns for the two groups of regular classroom teachers, the authors note that there was a fair amount of consistency in making judgments regarding placement. In both traditional and case study districts, regular classroom teachers estimated that approximately 85% of the youngsters "definitely should be in the program."

A somewhat different picture emerges when a comparison of the overall ratings by the project teachers in districts using the traditional selection approach is made with those by project teachers in districts using the case study approach. Here it is found that approximately 79% of the youngsters in traditional approach districts were judged as: "def-

initely should be in the program," whereas the figure for case study districts was 92% of the students. The difference between these percentages was found to be statistically significant, and thus a significantly greater amount of certainty about placement in the case study districts so far as the project teachers were concerned can be noted.

Discussion and Conclusions

Several conclusions appear to be warranted as a result of the findings discussed in the preceding sections of this article. The first and perhaps most important general conclusion is that the identification process should be based on a variety of types of information that reflect several indicators of a youngster's superior performance or potential for superior performance in a program that is specifically designed to enhance academic ability.

This conclusion is based on two general trends that emerged from the data. First, the collection of a wide variety of information about a particular youngster does not seem to present any hardships as far as time and costs are concerned. Indeed, the case study approach costs approximately one-third as much as the traditional approach, which in its pure form requires only one type of information—intelligence test scores. However, persons who served on selection committees in the case study districts pointed out the need for some type of information that is based on standardized tests of intelligence or academic aptitude. Thus, it seems clear that certain features of both the traditional and case study approaches are optimally desirable in a comprehensive identification system.

Another conclusion related to the efficiency issue deals with the number of students that must be processed in order to make final selections. Although it has been suggested that the case study approach will result in an unmanageable number of nominees, such was not the case in the data obtained in this study. The ratio of students screened to those selected was only slightly higher in districts employing the case study approach, and thus, it seems safe to conclude that a case study approach is feasible as far as time and cost are concerned.

An additional finding that lends support to the case study approach is that it appears to be more sensitive to identifying academically

able students in schools that serve minority group populations. A high level of effectiveness emerged in the followup ratings that were received from District 7, and this finding, coupled with extremely favorable comments regarding the identification of minority group children, suggests that a system based on diversified sources of information will help to take account of differences in youngsters' backgrounds in general. In other words, all types of differences in youngsters' backgrounds (e.g., racial, ethnic, socioeconomic, demographic) can be consid-

ered in a multiinformational approach, but such is not the case when identification rests solely on intelligence test scores. As greater efforts are made to expand the number of programs for gifted students, it will be important to have an identification system that is flexible enough to take account of population differences within states and within school districts that serve youngsters with a variety of backgrounds.

Relating to specific procedures for carrying out the identification process, an analysis of the value or usefulness of various types of

TABLE 3
Number and Percentage of Students Identified by Regular Classroom Teachers and Project Teachers as Qualified to be in Gifted Program

District	Type of teacher			
	Regular Classroom		Project	
	Number	Percentage	Number	Percentage
<i>Traditional districts</i>				
District 1				
Grade 1	3	100	9	82
Grade 3	6	75	7	88
Grade 5	7	100	7	70
District 2				
Grade 1	5	83	5	83
Grade 3	6	86	6	100
Grade 5	5	100	2	22
District 3				
Grade 1	4	80	4	80
Grade 3	3	60	7	88
Grade 5	6	100	8	100
Total Number & Average percent	49	88.33	55	79.22
<i>Case study districts</i>				
District 4				
Grade 1	6	100	6	100
Grade 3	5	100	6	100
Grade 5	8	80	7	88
District 5				
Grade 1	6	100	6	100
Grade 3	6	86	6	100
Grade 5	1	100	1	100
District 6				
Grade 1	9	69	10	77
Grade 3	15	88	14	82
Grade 5	14	93	13	87
District 7				
Grade 1	15	88	17	100
Grade 3	9	75	13	81
Grade 5	7	56	16	94
Total Number & Average percent	101	86.42	115	92.42

information in making selection decisions suggests that the opinions of past and present teachers are an important consideration in identification. Peer nominations appeared to be a valuable source of information but, since this technique was used in only one case study district, its usefulness must be viewed as a tentative conclusion at this time. Finally, in view of the role that project teachers play in identification, it seems clear that some special arrangements must be made to allow these persons released time for identification activity.

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II. Characteristics of the Gifted

Introduction

Educators and psychologists have long been interested in identifying characteristics of the gifted and talented. While this appears to be a perfectly logical study to undertake, it may be worthwhile to discuss the motives behind such investigations. Clearly, before generalizing about the reasons for studying the characteristics of the gifted, the dominating influence of one's definition must be considered, since for each definition of giftedness one can expect an entirely different set of characteristics. For example, while those favoring a high IQ definition might cite unusually complex sentence structure at an early age as characteristic of gifted children, a proponent of the high creative definition might suggest the gifted child is most easily recognized by his or her willingness to take risks (Gallagher, 1975). Those adhering to the demonstrated ability definition might describe the driving absorption with which these individuals tackle their work (Roe, 1975). On the opposite end of the spectrum, those who have not performed according to their supposed potential might be characterized as children whose mothers tend to hold a *laissez-faire* attitude (Pierce & Bowman, 1960). These discrepancies among definitions mandate that any conclusions about the characteristics of gifted children be prefaced by the guidelines used in determining giftedness.

Having established the need to qualify the definition of giftedness before discussing the prevailing characteristics of such individuals, a query as to the purpose of defining these traits seems appropriate. The literature indicates two separate schools of thought on this issue. The first theory suggests that such studies reveal important factors to be used in identifying gifted youngsters, while the second maintains that once the characteristics associated with giftedness are known, they can be developed in children who have indicated potential abilities. Both theories are worthy of further investigation.

In accepting the notion that the presence of certain characteristics in an individual indicates the potential for gifted behavior, several assumptions are made. First, a reverse correlation factor is assumed. Relating this to Pearce's discussion of "Creativity in Young Science Students," his finding of introversion among the male gifted science students would lead those holding this theory to believe introverted high school males are more apt to be gifted scientists than their extroverted classmates. It seems apparent that Pearce did not intend for educators to make this leap in logic.

An assumption of genetic giftedness is also implied: that is, "you have it or you don't, and if you don't have it, you can't get it." Kurtzman's article suggests highly creative boys in his study "had greater peer acceptance than the lower creative boys." If identification procedures were as cut and dried as some educators would like, those children accepted by their peers would be chosen as most likely to be creative and those not well accepted would never be accepted nor would they ever have much chance of being creative. This is perhaps an exaggerated view of the "you have it or you don't" theory, but it does serve to illustrate the caution that must be taken in using individual characteristics as indicators of potential giftedness.

Those in the developmental school of thought—that is, those who believe certain characteristics thought to be related to giftedness can be developed in potentially gifted children—also make several unsupported assumptions. First, they assume a causal relationship between the characteristic and gifted behavior. Otherwise, why bother to develop the trait? If someone holding this theory as true were to act upon the findings cited in Schaefer's article, "A Psychological Study of 10 Exceptionally Creative Adolescent Girls," he or she might encourage parents to wait longer before having children and to enjoy their own cultural and educational pursuits. While this might be a good rule in general, Schaefer does not appear to be suggesting that highly creative young girls can be generated in this way.

The other assumption made in accepting this theory is that such characteristics can be developed and/or controlled. While some factors can be manipulated, such as educational or

cultural experiences, many internal characteristics, such as others' attitudes or self confidence, are more difficult to modify. Torrance describes some of the more intrinsic characteristics in his article, "Creative Young Women in Today's World," and discusses some of the difficulties encountered in trying to distinguish between individual and societal influences.

While it is essential that researchers continue to study the characteristics of the gifted, it can not be overemphasized that the results of their findings must be interpreted with great caution. In our desire to create a "nice neat package of gifted characteristics," we must be careful not to cause either harmful or restrictive stereotypes or incidents of false identification of giftedness, as discussed by Namy in his article, "Intellectual and Academic Characteristics of Fourth Grade Gifted and Pseudogifted Students."

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Creativity in Young Science Students

Abstract: In a study of the personality of youth with potential in scientific research, groups of high school males participating in college science programs were compared on factored personality inventories with normative groups of high school boys, college males, and eminent research scientists. Subjects were found to differ from other high school males in a majority of personality factors. Boys who were most like adult research scientists were more introverted and self sufficient, and were less anxious and guilt prone. They were rated by supervisors of research projects on which they were working as showing more research promise, when compared with unselected high school males.

RECENT studies have shown that research competence in adults can be related to self report measures of personality as well as to cognitive abilities (Jones, 1964). The presence on college campuses of highly selected high school science students for summer programs makes it possible to study some of their characteristics. This study explored this type of group for leads into theory, selection, and guidance of the possible future scientist.

The subjects of this study were males who had finished their junior year of high school. All were selected from a large group of geographically dispersed candidates to attend summer institutes of six weeks' duration at two colleges. Group 1 consisted of 60 students at an NSF program of college science courses at Cornell University in 1961. Groups 2, 3, and 4 were General Electric Research Fellows at Union College in the summers of 1961 through 1963. Each group contained 20 members who worked full time on individual research projects under the supervision of college staff members.

Procedure

The age of the subjects indicated use of the High School Personality Questionnaire of the IPAT series (Cattell, Beloff, and Coan, 1958);

Form A was used with the 1961 groups. However, it was also desirable to test the possibility of using the 16 Personality Factor Questionnaire (Cattell and Stice, 1957). This test is longer and allows comparison with the college population. The 16PF was used in subsequent summers with research Fellows, who also took the Miller Analogies Test (MAT) and the Doepelt Mathematical Reasoning Test (DMRT), Form J.

The first aspect of the study was to compare IPAT test scores for different groups and the scores of the two other tests with appropriate norms. The scores were also compared with those on the same tests which were available for a group of eminent research scientists (Cattell and Drevdahl, 1955).

Profiles were compared by means of the profile similarity coefficient, r_p (Cattell and Stice, 1957) between the four groups of students and the adult group. Secondly, the investigator sought to discover whether research promise among the Fellows could be predicted by judges. Each group of 20 youngsters was assigned four staff members, so that ten boys worked with two faculty members. Each of the pair of faculty supervisors assigned to groups of ten was asked to rank without consultation the research promise within the

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group of ten. The rho's between pairs of judges were: Group 2, .77 and .28; Group 3, .92 and .95; and Group 4, .93, and .41.

In two of the subgroups the degree of agreement between judges was disappointing. The vagueness of the criterion and the short acquaintance of staff members with Fellows are relevant factors. Pooling the ranks of each pair of judges resulted in reliabilities corrected by the Spearman-Brown formula to: .87, .43, .96, .97, .96, and .58.

The third step in data treatment was to order students according to their deviation from the adult research profile by r_p . This enabled a comparison of two criteria of research promise—judgment by supervisor and similarity of personality profile with those of men of demonstrated research achievement.

Results

Comparison with Normative Groups. Table 1 gives the profiles of Groups 1 and 2 in sten value based on manual norms for high school boys (Cattell, Beloff, and Coan, 1958). The factor

TABLE 1
Mean HSPQ Scores of Two Groups of High School Students and a Group of Eminent University Scientists Compared with Normative Group of Male High School Students

Factor	Mean Sten Scores		
	Group 1 (N = 60)	Group 2 (N = 20)	Scientists (N = 144)
A Cyclothymia	6.8**	7.3***	3.4***
B Intelligence	8.2***	9.7***	6.8***
C Ego strength	6.0	6.6*	6.9***
D Excitability	4.2**	3.9**	5.4
E Dominance	5.5	5.0	7.2***
F Surgency	5.0	5.7	3.5***
G Group superego	5.8	6.8**	3.4***
H Parmia	6.7**	7.2***	6.5**
I Premia	5.5	6.9**	7.1***
J Coasthenia	6.2*	7.0**	6.5**
O Guilt proneness	3.7***	3.2***	3.6***
Q ₂ Self sufficiency	6.9***	6.6*	6.5**
Q ₃ Self sentiment	6.9***	6.4*	6.8***
Q ₄ Ergic tension	4.6*	3.5***	5.1
Anxiety	4.3**	3.4***	4.5*
Introversion	5.1	4.6	6.6**

* $p < .05$

** $p < .01$

*** $p < .001$

profile of Cattell and Drevdahl's (1965) eminent research scientists is presented for comparison, based on the same norms.

Both groups were distinctively different from the norms. Twenty-one of 28 factor measures were significantly different from zero ($p < .05$, two tailed test) and three of four of the measures of second order factors. Group 2 was the more distinctive, being farther from the mean on all but two factors. The similarity of the groups can be pointed up by the fact that in no case in which one group was clearly deviant from the mean was the other group on the other side of the mean of 5.5. As Table 3 shows, the profile similarity coefficient (r_p) was .79.

On second order factors, the mean score on anxiety (2D, 2Q₄, 2Ø, 2Q₈-, C-, H-) was low for both groups. Mean score for introversion (2A-, 2F-, 2H-, Q₂) was significant for Group 2. Though both groups tended to be extroverted, it is more precise to say that they were strong on A and H; F was mid-range, while Q₂ was in the introverted direction.

Compared to the professional scientists, the subjects were more warm (A), phelgmatic (D), submissive (E), and of higher superego (G). All these differences were significant at beyond the .001 level. The subjects also scored above the adults on brightness (B) at the same level.

As Table 2 shows, the 16PF groups, compared with college males, were less extreme than were subjects compared with high school norms on the HSPQ. Still, half of the factor scores were distinctive. These groups, like the researchers, were more reserved (A), dominant (E), serious (F), and lower in group superego (G) than Groups 1 and 2. For both groups, N (shrewd), Q₁ (experimenting), and Q₂ (self sufficient) were above the norm. Unlike Groups 1 and 2, Groups 3 and 4 were not significantly venturesome (H).

On second order factors, the 16PF Fellows' scores were significantly introverted, whereas Group 2 was extroverted. The 16PF groups were average with respect to anxiety, whereas the HSPQ boys had been very low.

Comparison of the two pairs of groups involves scores of variation from differences in test instrument and consequent normative

TABLE 2

16PF Scores of Two Groups of High School Research Fellows and a Group of Eminent University Scientists Compared with College Males

Factor	Mean Sten Scores		
	Group 3 (N = 20)	Group 4 (N = 19)	Scientists (N = 144)
A Cyclothymia	4.0**	4.9	3.0***
B Intelligence	7.9***	7.1**	7.4***
C Ego strength	5.4	5.2	4.8*
E Dominance	6.4*	6.2	5.5
F Surgency	3.8***	4.1**	2.8***
G Group superego	4.4*	4.4*	4.8*
H Parmia	5.6	5.2	4.4**
I Premia	5.8	6.7*	6.7**
L Protension	5.5	5.9	4.5**
M Autia	6.3	6.4*	5.6
N Shrewdness	6.4*	6.4*	5.6
O Guilt proneness	5.0	5.9	4.18*
Q ₁ Radicalism	7.5***	7.7***	6.6***
Q ₂ Self sufficiency	7.5***	7.7**	8.4***
Q ₃ Self sentiment	5.8	6.1	6.4*
Anxiety	5.1	5.4	5.0
Introversion	6.6*	6.5*	7.5***

* $p < .05$

** $p < .01$

*** $p < .001$

TABLE 3

Profile Comparisons by r_p of Four Student Groups and an Adult Scientists Group for 12 Factors Common to the HSPQ and 16PF

Group	Group			Adults
	2	3	4	
1	.79	.75	.62	.52
2		.42	.39	.38
3			.62	.88
4				.85

populations, and also from selection procedures. As Table 3 shows, Groups 1 and 2 were more similar to each other than to the adult scientists, while Groups 3 and 4 were more like the latter group. It is possible that the 1962 and 1963 samples were more successful attempts at recruiting student experimenters. Particularly striking in this connection is the contrast, complicated as it is by different reference groups, between the much lower A and F of the 16PF sample. These factors are given large beta weights in the IPAT specification equation for creativity (Institute for Personality and Ability

Testing, 1963). In any case, all four groups may be characterized as very self sufficient (Q₂), rather relaxed (Q₄), controlled (Q₃), not very guilt prone (O), anxious or tough minded (I), as well, of course, as very intelligent (B). On the basis of total profile comparison (Table 3) for the 12 factors common to both inventories, all r_p 's were significantly different from 0 at the 5 percent level; that is, all four groups showed something in common with each other and with mature scientists as measured by self report.

Judged Research Promise. Correlations for research Fellows (Groups 2, 3, 4) between mean rank of pairs of judges, Spearman-Brown corrected, on research promise (rho) and questionnaire factor for groups of 10 were computed. Of the 96 rho's, nine reached the .05 level of significance (two tailed test). This is not far from what would be expected by chance. Moreover, the significant correlations usually only appeared with one of the six subgroups. The results of this analysis offer no convincing basis for individual prediction of research performance on the basis of judged rank in groups of ten, when single or second order factors are used. The next section shows what happens when profiles are treated as units.

Pattern Similarity Analysis. The criterion of research potential from the personality side involved (a) finding the r_p between the profile of each student and that of the university scientists and (b) treating this as a score indicative of closeness to the criterion.

Degree of relation between the two indices of research promise was sought by correlating r_p with ranking judges. For this calculation, judges' ranks were changed into standard scores (Walker and Lev, 1953). The r for $N:59$ was found to be .32. This value is significantly different from zero at the $p < .01$ level. It seems that the two criteria had something in common when profiles rather than single factors were used.

The last major analysis consisted of trying to see how factors would relate to total profiles: With r_p as a criterion, how closely will each factor follow the profile of which it is a part? Table 4 shows the r 's between r_p and score on factor for each student, for the total sample, arranged in the groups.

No calculations for factor B were done for Groups 1 and 2. All but a few sten scores were 9 or 10. The HSPQ version of an intelligence test was too easy for these gifted youngsters. Other blanks in the table result from the fact that some factors occur in only one of the two inventories used.

Interpretation of the data in Table 4 is difficult because of the difference in instruments, HSPQ and 16PF, and from the norms resulting from these. Also, Group 1 differed from the other groups in size and selection. Table 5 gives averages of r , transformed, for the various combinations. Column I shows average r 's for the four groups, with Group 1 given a weight equal to that of the total Fellow groups, reflecting its size. Column II shows means for total group with Group 1 given a weight equal to each of the others. In column III the HSPQ groups are averaged, with Group 1 weighted according to size. In column IV it is unweighted since Groups 3 and 4 were of comparable size. Col-

umn V combines the 16PF groups. Thus Table 5 shows the results of various group combinations.

The degree of association of the total experimental profile with each of its components in these student groups seems to be highest with O, introversion and anxiety. Q_2 , Q_3 , and Q_4 are significant for the total 16PF group. The HSPQ groups are consistent in -G. Total H for HSPQ groups is significant, but the effect is mainly due to Group 2. A similar situation holds for A.

These data may be organized by asking what factors seem to be most important for the profile. If research scientists are significantly low on, for example, A, when compared with subjects not selected for research eminence, is A significantly low in subjects best matching the average research profile? For A the answer is—not especially. Although the total is significant, this is due largely to one group. Thus if a cool, reserved manner (-A) is characteristic of the

TABLE 4
Relation (r) between Profile Similarity Coefficient (r_p) and
Questionnaire Factors

HSPQ 16PF Factors	Group 1 (N = 60)	Group 2 (N = 20)	Group 3 (N = 20)	Group 4 (N = 19)
A	-.07	-.85***	-.19	.21
B			-.06	.16
C	.42***	-.53**	-.05	.12
D	-.01	.53**		
E	.43**	-.34	-.33	.62***
F	-.02	-.45**	-.48**	.08
G	-.31**	-.41*	.06	.22
H	.14	-.86***	-.56**	.20
I	.20	-.11	.45**	-.05
J	-.18	.25		
L			-.24	-.04
M			.08	-.27
N			-.13	-.03
O	-.42***	.33	-.30	-.45**
Q_1			.14	.10
Q_2	.08	.14	.38*	.27
Q_3	.16	-.10	.18	.47**
Q_4	.00	.35	-.12	-.66***
Anxiety	-.34***	.55**	-.20	-.68***
Introversion	.23*	.85***	.25	-.26

* $p < .10$
 ** $p < .05$
 *** $p < .01$

syndrome under consideration, it is not markedly present in these groups as studied. What may be distinctive for high school gifted male students of science are low guilt proneness (O), self sufficiency (Q₂), and second order factors, introversion and low anxiety. If the 16PF is used on student research Fellows, low tension (Q₄) and high self sentiment (Q₃) are also characteristic. When HSPQ is used, conscientious persistence (G) approaches significance in the negative direction.

Ego strength (C) is of particular interest. The HSPQ groups show significant *r*'s but in opposite directions. This still could be due to chance. However, as Tables 2 and 3 show, C is low for the adult scientists as compared with high school norms, while it is high by college norms. This again underlines the importance of test, age, norms, and samples.

Dominance (E) is another special case. Here two groups show significant positive *r*'s. The other two show moderate though nonsignificant minus *r*'s. Again there is a variation in the criterion profiles (Tables 1 and 2). The adult scientists are markedly more dominant than high school, but not college, males as noted above.

Venturesomeness (H) is notable in that the total group mean is significant in the low direction. The research scientists are low by high school norms, high by college norms, but, in total, are not below average.

As for other peaks and valleys of the criterion profile, intelligence (B) is not as high as expected. This is probably because of unreliability due to restricted range. Quiet seriousness (F) is significant for the Fellows for total group when Group 1 is not weighted for size.

TABLE 5
Comparison of Mean *r*'s or *r_p*'s and Factors for Combined Student Groups

HSPQ 16PF Factors	Comparison I (N = 119)	Comparison II (N = 79)	Comparison III (N = 80)	Comparison IV (N = 40)	Comparison V (N = 39)
A	-.18**	-.23*	-.37**	-.50***	.20
B					.05
C	-.14	-.03	.19	-.07	.03
D			.18	.28*	
E	.12	-.05	.25**	.05	.15
F	-.16*	-.49***	-.16	-.25	-.21
G	-.18*	-.12	-.34**	-.26*	.14
H	-.21**	-.38***	-.29**	-.41**	-.21
I	.15*	.17	.14	.05	.21
J			-.07	-.04	
L					-.11
M					-.10
N					-.08
O	-.29***	-.22**	-.25**	.05	-.38**
Q ₁					.13
Q ₂	.18**	.23**	.10	.11	.33**
Q ₃	.18**	.19*	.14	.03	.33**
Q ₄	-.10	-.13	.09	.08	-.43***
Anxiety	-.24**	-.19*	-.11	.13	-.47***
Introversion	.31***	.37***	.50***	.60***	.00

* *p* < .10

** *p* < .05

*** *p* < .01

Note:—Column I: Total, with Group 1 weighted; Column II: Total, with Group 1 unweighted; Column III: Groups 1 and 2, with Group 1 weighted; Column IV: Groups 1 and 2, with Group 1 Unweighted; and Column V: 3 and 4 unweighted.

Tendermindedness (I) is below $p = .10$ on the whole, in the expected direction, but due mainly to one group. Radicalism (Q_1) is not supported, nor is coasthenia (J) or naivete (N).

MAT and DMRT Analysis. As part of the selection routine, the research Fellows took the MAT and DMRT. The mean ($N=60$) on the MAT was 77. This is above the 65th percentile of 251 graduate students in physical sciences at eight universities. The SD of 5.9 was much smaller than that of the normative group, which was 16.6. On the DMRT, the student mean was 43.5; SD was 4.9. Both measures were compared to the other variables of this study. No significant relations were found between MAT or DMRT and r_p , judges' standard scores, or test factors (except Q_4 , where there was an r of .38, $p < .01$ with MAT).

Summary and Conclusions

The following conclusions may be drawn. The highly selected boys in this study were found to be different from other high school boys on 20 of 28 factor measures of personality. Members of the samples, when compared with college males, differed on eight of 16 factors. Gifted youngsters are not merely brighter and better informed, but show characteristic personality traits. Although ratings of faculty judges did not relate very closely to questionnaire factors individually, they were significantly related to the profiles of eminent research scientists. The

adequacy of the criterion was a problem here. Students who were most similar to university researchers overall, according to questionnaire factor profiles, were more introverted and self sufficient. They were also less anxious and guilt prone. No relationship between measures of verbal and mathematical reasoning, and personality factors or the two criteria of research promise emerged. The 16PF or college version of the IPAT series was found to be a better tool than the HSPQ for selecting candidates for advanced special college programs.

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A Study of School Attitudes, Peer Acceptance, and Personality of Creative Adolescents

Abstract: A comparison of three groups of adolescents with differing levels of creativity was made to determine if they differed with respect to personality characteristics, peer acceptance, and attitudes toward school. The results indicate that more creative students tend to be more intelligent, adventurous, extroverted, and self confident. They also have a less favorable attitude toward school. In terms of peer acceptance, sex appears to be a factor. Higher creative boys receive greater acceptance while higher creative girls are less accepted by their classmates.

ARE schools today meeting the needs of their creative students? Do the schools provide a positive or negative psychological climate for the creative youngster? The findings of several investigators suggest the possibility that the atmosphere in today's schools might serve to inhibit rather than to foster creativity. Getzels and Jackson (1960) and Torrance (1962) discovered that although higher creative and higher IQ groups attained the same level of achievement on standardized tests, high IQ group members were rated by teachers as being more desirable to have in class than average students. The higher creative group members, on the other hand, were rated as being equally desirable as average students.

The research thus suggests that teacher acceptance of the creative student is not all that it might be. There are several other variables, however, in addition to teacher acceptance, which merit attention if one wishes to gain knowledge of the value of a school's atmosphere to its creative students. These variables include attitudes toward school, peer acceptance, and personality characteristics of the student.

Purpose of Study

The purpose of this study was to investigate whether there were differences between students of higher, middle, and lower creative ability in terms of the following variables: peer acceptance, attitudes toward school, and personality characteristics.

Specifically, this study attempted to answer the following questions:

1. Are there differences between adolescents with differing degrees of creative ability in terms of their acceptance by peers?
2. Are there differences between adolescents with differing degrees of creative ability in terms of their attitudes toward school?
3. Do adolescents with differing degrees of creative ability also demonstrate differences in certain personality characteristics?

Subjects

The subjects selected for this study were 80 boys and 71 girls. This group included all the students in the ninth grade of a centralized school district in New York State who, on the School and College Ability Test (SCAT), had

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attained total scores which had lower limits of the percentile band at or above the 84th percentile. These students were, for the most part, in regents or college bound classes that included other students who were both less and more capable than themselves.

Instruments

1. *Measures of Creativity.* The seven tests selected for the study were chosen from the Kit of Reference Tests for Cognitive Factors (1963) and are believed to measure factors related to certain categories of importance to creative thinking on Guilford's structure of intellect model (1960). The seven tests employed in this study were: Controlled Associations, Word Arrangements, Thing Categories, Word Beginnings and Endings, Utility, Gestalt Transformation, and Apparatus.
2. *Measure of Peer Acceptance.* The Classroom Social Distance Scale published in a text by Cunningham (1951) was the instrument selected because it provides a group social distance score which indicates the degree of acceptance or rejection of an individual by the group. It enables each youngster in a class to rate all other students in the class rather than only those he might like most or least. This instrument also allows the rater the opportunity of rating his classmates on a five point scale, thus providing him with a range on the rejection-acceptance continuum. This scale was administered to any English class that included one or more of the subjects in this study.
3. *Measure of Attitude toward School.* The Student Opinion Poll is a 60 item questionnaire developed by Getzels and Jackson (1960) to elicit from the student his opinion about teachers, curriculum, student body, and classroom procedures.
4. *Measure of Personality Characteristics.* The Junior-Senior High School Personality Questionnaire (HSPQ) was designed by R. B. Cattell and Halla Beloff (1962) and is a downward extension of the Cattell 16PF scale. The HSPQ is intended for use with individuals between the ages of 12 and 17. The test measures 14 independent dimensions of personality. The 14 factors are listed

below by letter, by technical, and by popular names.

- A— Schizothymia (Critical, Aloof) versus Cyclothymia (Sociable)
- B— Low General Mental Capacity (Dull) versus General Intelligence (Bright)
- C— Ego Weakness (Immature) versus Ego Strength (Mature)
- D— Phlegmatic Temperament (Placid) versus Excitability (Unrestrained)
- E— Submissiveness (Mild) versus Dominance (Aggressive)
- F— Desurgency (Serious) versus Surgency (Enthusiastic)
- G— Lack of Acceptance of Group Moral Standards (Undependable) versus Super Ego Strength (Conscientious)
- H— Threctia (Timid) versus Parmia (Adventurous)
- I— Harria (Realistic) versus Premsia (Especially Sensitive)
- J— Zeppia (Liking Group Action) versus Coasthenia (Individualistic)
- O— Confident Adequacy (Confident) versus Guilt Proneness (Insecure)
- Q₂—Group Dependency (Group Dependent) versus Self Sufficiency (Individually Resourceful)
- Q₃—Poor Self Sentiment Formation (Lax) versus High Strength of Self Sentiment (Controlled)
- Q₄—Low Ergic Tension (Relaxed) versus High Ergic Tension (Tense)

Creativity Groups

Three groups were formed on the basis of a composite creativity score, derived by converting the raw scores on each of the creativity tests to standard scores and then summing them. These groups were:

1. Higher Creative Group: these students had composite creativity scores which placed them in the upper third of the population of 151 students who took the creativity battery.
2. Middle Creative Group: these students were in the middle third of the creativity population of 151 students.
3. Lower Creative Group: these students were in the lower third of the creativity population of 151 students.

Results

The higher creative, middle creative, and lower creative groups were compared by sex in terms of their mean scores on the 14 dimensions of personality of the HSPQ, their acceptance by peers as measured by the Classroom Social Distance Scale, and their attitudes toward school as measured by the Student Opinion Poll.

Tables 1, 2, and 3 present the data for those variables where significant differences were found.

It can be seen from Table 3 that when higher creative boys were compared with lower creative boys, there were significant differences between the mean scores on personality factors A, B, and O, thus favoring the higher creatives as more sociable, intelligent, and self confident. The higher creative boys also had a significantly lower mean score on the Classroom Social Distance Scale which indicated they had greater peer acceptance than the lower creative boys.

The higher creative girls had significantly higher scores than the lower creative girls on

factors B, F, and H, indicating the higher creatives were brighter, more enthusiastic, and more adventurous. They also displayed a more negative attitude toward school as evidenced by their significantly lower mean score on the Student Opinion Poll.

When middle creative boys were compared to lower creative boys, the middle creatives had significantly higher scores on factors A and B and a significantly lower score on factor D. The middle creatives were thus more sociable, brighter, and more restrained than their lower creative counterparts.

Middle creative girls, when compared with lower creative girls, had significantly higher mean scores on factors B and F and on the Classroom Social Distance Scale. In other words, the middle creative girls were brighter, more enthusiastic, but less well accepted by their classmates than the lower creative groups.

Discussion

Do adolescents with differing degrees of creative ability demonstrate differences in certain

TABLE 1
Means and SD's of Personality Factors, Classroom Social Distance Scale, and Student Opinion Poll for the Groups of Boys

Factors	Higher Creative			Middle Creative			Lower Creative		
	N	$\bar{X}$	SD	N	$\bar{X}$	SD	N	$\bar{X}$	SD
A-Schizothymia versus Cyclothymia	23	10.5	2.98	30	10.3	3.23	27	8.4	3.82
B-Low General Intelligence versus General Intelligence	23	8.6	0.71	30	8.5	1.00	27	7.9	1.00
D-Phlegmatic versus Excitable	23	9.7	4.00	30	9.1	3.27	27	10.9	3.52
F-Desurgency versus Surgency	23	11.7	2.65	30	10.6	3.78	27	10.9	3.05
H-Threctia versus Parmia	23	11.3	4.20	30	10.8	3.72	27	9.9	3.66
O-Confident Adequacy versus Guilt Proneness	23	8.5	3.50	30	8.1	3.00	27	10.7	3.42
Classroom Social Distance Scale ^a	23	221.4	40.12	30	237.7	44.78	27	247.7	61.91
Student Opinion Poll ^b	22 ^c	31.2	9.35	30	31.9	8.71	27	34.5	8.55
SCAT	23	304.70	8.72	30	301.30	8.89	27	297.00	4.47

^a A student's score is derived by giving an arbitrary weight to each possible choice, multiplying total weight by the number of times the student received this rating from his classmates, summing these scores, and then dividing the total score by the number of children who did the rating. If, for example, five students rated the subject 1, seven students 2, four students 3, two students 4, and one student 5, his total score would be 44 divided by 19 (number of raters) or 2.31.

^b Score derived by student receiving one point each time he chooses the most favorable response to a multiple choice item. The higher a student's score, the more favorable is his attitude toward school.

^c One student left the district before this poll was administered.

personality characteristics? The results tend to support some of the thoughts of Maslow (1954) and Rogers (1954) that the creative individual has a greater tolerance for ambiguity and welcomes the less structured unfamiliar situation. He is, in other words, the "gambler," a person who prefers to take a chance rather than play it safe. Paraphrasing Maslow (1954), he prefers

the anxieties and delights of growth to the anxieties and delights of safety. Analyses of the scores on factor H (timid or adventurous) of the HSPQ indicate this tendency. Although not always statistically significant, there is a consistent trend, in the case of both sexes, for the more creative group to be the more adventurous.

TABLE 2
Means and SD's of Personality Factors, Classroom Social Distance Scale, and Student Opinion Poll for the Groups of Girls

<i>Factors</i>	<i>Higher Creative</i>			<i>Middle Creative</i>			<i>Lower Creative</i>		
	<i>N</i>	$\bar{X}$	<i>SD</i>	<i>N</i>	$\bar{X}$	<i>SD</i>	<i>N</i>	$\bar{X}$	<i>SD</i>
A-Schizothymia versus Cyclothymia	27	10.1	4.26	22	11.3	3.67	22	9.7	3.73
B- Low General Intelligence versus General Intelligence	27	8.5	0.77	22	8.2	0.71	22	7.7	1.00
D-Phlegmatic versus Excitable	27	9.9	2.79	22	9.5	3.27	22	9.1	3.39
F-Desurgency versus Surgency	27	10.6	3.45	22	11.1	3.54	22	8.3	2.33
H-Threctia versus Parmia	27	10.5	3.49	22	9.2	4.18	22	8.4	4.15
O-Confident Adequacy versus Guilt Proneness	27	11.1	3.21	22	11.0	3.39	22	11.0	2.92
Classroom Social Distance Scale	27	231.3	47.00	22	245.0	15.65	22	223.0	14.93
Student Opinion Poll	27	31.5	6.69	22	33.0	5.74	22	33.3	6.01
SCAT	27	299.44	6.54	22	299.00	5.12	22	295.36	2.51

TABLE 3
SD's between Mean Scores on Personality Factors, Classroom Social Distance Scale, and Student Opinion Poll for the Groups of Boys and Girls:
One Tailed Test

<i>Factors</i>	<i>Higher versus Middle</i>		<i>Higher versus Lower</i>		<i>Middle versus Lower</i>	
	<i>Boys</i>	<i>Girls</i>	<i>Boys</i>	<i>Girls</i>	<i>Boys</i>	<i>Girls</i>
A-Schizothymia versus Cyclothymia	0.06	-1.01	2.15*	0.40	2.20*	1.46
B- Low General Intelligence versus General Intelligence	0.39	1.15	2.53**	2.86**	2.00*	1.82*
D-Phlegmatic versus Excitable	0.60	0.45	-1.08	0.80	-1.95*	0.31
F-Desurgency versus Surgency	1.26	-0.50	1.04	2.68**	-0.35	3.12**
H-Threctia versus Parmia	0.39	1.18	1.23	1.90*	0.96	0.61
O-Confident Adequacy versus Guilt Proneness	0.46	0.07	-2.31	0.08	-3.14**	0.00
Classroom Social Distance Scale	-1.31	-1.08	-1.74	0.63	-0.74	1.74*
Student Opinion Poll	0.00	-0.70	-1.27	-2.33*	-1.14	-1.45
SCAT	1.43	0.15	3.93**	2.74**	1.16	2.94*

* .05 Level of Significance

** .01 Level of Significance

Though the trend is not quite as consistent, it appears that the more creative subjects in this study tend to be more outgoing, enthusiastic individuals than their lower creative counterparts. This is indicated by comparison of Desurgency and Surgency scores. In the case of the boys, none of the differences between groups was statistically significant, but the higher creative group tended to be more surgent than either the middle or lower groups, and middle creative boys were more surgent than the lower creative group. In the case of the girls, both the higher and middle groups were more surgent than the lower creative group, and the differences were significant at the .01 level, but the middle creative group had a slightly higher mean score than the higher creative group.

Inspection of the data regarding Ego Weakness versus Ego Strength and Confident Adequacy versus Guilt Proneness gave rise to some interesting speculations. Both the higher and middle creative boys demonstrated greater self confidence and emotional maturity than the lower creative boys. Virtually no differences at all were revealed between the groups of girls on these two factors. Furthermore, the lower creative group of boys seemed to demonstrate greater stability and self confidence than did any of the girls.

This leads the investigator to speculate on whether this is simply an idiosyncrasy of this particular population, or whether it has wider implications. The research findings of Torrance (1962), regarding cultural blocks to creativity, may be pertinent here. Torrance, in his studies of elementary school children, found that as early as third grade, girls were more reluctant to think creatively than were boys. He concluded that by this time, girls had been conditioned to be more passive and to accept things as they are, rather than to try to manipulate or change things. He also found that even when girls were not reluctant to express their ideas, the contributions of boys were more highly valued by their peers. One wonders, therefore, whether there is some relationship between the insecurity and lower self esteem of the girls in this study and possible environmental pressures which inhibit their desire to be creative. The road to self actualization might

very well be much smoother for creative boys than for creative girls.

This study also suggests that educators today carefully evaluate their attitudes and behavior toward the more creative girls in our school systems. There has been much talk about the waste of talent among the women of this country. There seems to be some evidence that we not only are stifling creativity among women, but at the same time affecting their psychological health. Serious study needs to be given as to how the creative contributions of the female student can receive more positive recognition from both teachers and peers.

This study does not seem to confirm the findings of others that there is little relationship between creativity and intelligence beyond an IQ of 120. It was initially felt that there would be no difference between the experimental groups on intelligence since all the subjects had total SCAT scores at or above the 84th percentile. Inspection of Table 3 reveals significant differences between the higher creative and lower creative groups on the SCAT for both sexes and a significant difference again on the SCAT between middle and lower creative girls. Factor B (dull versus bright) of the HSPQ provided very similar results. The investigator is thus somewhat skeptical about Torrance's (1962) admonition to those involved in selecting students for gifted child programs that they would tend to miss about 70 percent of the most creative students if they resorted to intelligence tests as their major means of selection. At the present time, the data in this study suggest that an intelligence test would be the best predictor available for assessing creativity along the dimensions defined here.

Are there differences between adolescents with differing degrees of creative ability in terms of their acceptance by peers? The results bearing on peer acceptance appear to be very much related to the above discussion of the Emotional Stability and Confident Adequacy dimensions of personality. The data revealed, for example, that the higher creative girls are less well accepted by their peers than either the middle or lower creative groups of girls, whereas the higher creative boys are the most accepted group. This is probably due to the greater security and stability of the higher

creative boys which enables them to relate better to their peers. The creative endeavors of the boys might also be perceived by their peers in a more favorable light than those of the higher creative girls. The same response in the classroom, for example, might be received differently, depending upon whether it is made by a boy or a girl.

Are there differences between adolescents with differing degrees of creative ability in terms of their attitude toward school? A very important finding of this study involves the differences between the groups in attitude toward school. In the case of both sexes, there is evidence that the more creative a student is, the less he likes school. The difference between the higher creative girls and the lower creative girls was statistically significant at the .01 level of confidence. Although not significant at either the .01 or .05 level for boys, the direction of this attitude toward school was less favorable for higher than for lower creative groups.

The greater dissatisfaction with school of higher creative children should certainly cause some concern to educators. This is especially true when one considers the fact that these youngsters comprised a group which was both highly creative and highly intelligent and was assumed to be well oriented toward school, unlike Getzels and Jackson's (1960) higher creative, lower intelligent students. It is possible, of course, that the dissatisfaction expressed in this study by the more creative subjects is due to their being prone to have more questioning minds and that they would therefore tend to be more critical of anything they would be asked to evaluate. However, this writer does not feel that educators can afford to be complacent and simply accept this reasoning. Even if this is the situation, we can profit from knowledge of their criticisms and make their school environment even more stimulating.

Conclusions

The following conclusions can be made from this study:

1. The more intelligent a person, the more creative he is likely to be. This holds true even when dealing with a select sample of individuals who are in the top 15 percent of the population in terms of intelligence.

2. More creative individuals tend to be more adventurous and have a greater tolerance for ambiguity than less creative individuals.
3. More creative individuals tend to be more extroverted than their less creative counterparts.
4. More creative boys are more self confident and mature than less creative boys, but there is no difference between more and less creative girls on these two personality characteristics.
5. More creative boys tend to receive greater acceptance from peers than less creative boys but more creative girls are less accepted by their classmates.
6. There is a trend in the direction of a negative relationship between creativity and a favorable attitude toward school.

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A Psychological Study of 10 Exceptionally Creative Adolescent Girls

Abstract: Ten high school girls were identified as exceptionally creative on the basis of teacher nominations and test scores. Historical, personality, and projective data were collected by means of tests and interviews. Particular emphasis was placed on life history antecedents of creative achievement. The highly creative girls were found to possess a number of common characteristics, particularly in the areas of familial and educational history, leisure time activity, fantasy experience, and self concept.

IN THE course of a larger study of the environmental correlates of adolescent creativity (Anastasi & Schaefer, 1969; Schaefer & Anastasi, 1968), an intensive clinical investigation was conducted on 10 adolescent girls who had given evidence of exceptional creativity in the classroom. The aim of this exploratory study was to provide promising leads for further investigation, particularly in regard to the relationship between early creative achievement and such factors as home background, educational experiences, leisure time activities, self concept, and personal fantasies. In a number of respects, the present study is similar to Roe's (1946, 1953) clinical studies of small groups of artists and scientists. The present study, however, focused on historical information, while Roe's studies gave particular emphasis to projective test data.

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Method

Subjects

The subjects were 10 girls, 16 and 17 years of age, who were completing their senior year at five high schools in the New York metropolitan area. The group consisted of 9 Caucasians and 1 Oriental. Four of the girls reported that they came from homes disrupted by divorce or death of one parent. The girls in this study were part of a larger group of 200 creative girls who, in turn, were selected from an initial pool of several thousand high school females (Anastasi & Schaefer, 1969).

The 200 creative girls in the earlier study all attended high schools that offered special courses or programs providing opportunities for creative achievement, e.g., art, creative writing. In addition, they had to meet two criteria of selection: first, they were nominated by their teachers as having produced one or more creative products, such as a story, poem, or painting; and second, they scored above a minimum cutoff (total score of 30) on Guilford's Alternate Uses and Consequences tests. For the present study, the teachers and department heads of the respective schools were asked if, in their judgment, any of the girls in the previous study had given evidence of "exceptionally creative" work. All the girls in this study were so nominated; half of the girls were described by their teachers as having

produced a highly creative product in the art field and half in the writing field.

Procedure

The following test data were available for the 10 subjects from the earlier studies: Gough Adjective Check List (Schaefer, 1969), Barron-Welsh Art Scale (Schaefer, 1968), Franck Drawing Completion Test (Anastasi & Schaefer, in press), and a biographical inventory (Anastasi & Schaefer, 1969). For the present study, the author conducted an interview with each of the subjects to obtain more detailed information about the background data contained in the biographical inventory. The author also administered two projective tests to each girl: Draw-A-Person Test and the Thematic Apperception Test (TAT). The following TAT cards were used: 2, 4, 5, 6BM, 7BM, 7GF, 8BM, 9GF, 16, 18GF.

The results of the projective tests were analyzed separately by two clinical psychologists. Advised only of the sex, age, level of creativity, and socioeconomic backgrounds of the subjects, the two clinicians were asked to give a global evaluation of each girl's projective responses, including in these evaluations such features as characteristic conflicts, defenses, and identification figures.

Results

The subjects' life history data will be reported first, followed by their personality and projective test results. The life history data will be discussed in terms of the following broad categories: health, family, education, leisure time activities, social history, and fantasy experiences.

Life History Data

Health. All the subjects reported that their health was above average and that they had a great deal of energy, especially for activities that interested them. No prolonged illnesses or hospitalizations were noted. Half of the group reported that they had poor vision. Stating that their high school schedule was quite hectic, most of the subjects indicated that they received only moderate exercise and averaged only 6 hours of sleep a night. Many of the girls indicated that they were "night people" in that they did their best work late at

night. Another interesting finding was that, when asked which hand they threw a ball with and which eye they looked through a telescope with, 4 of the 10 girls reported mixed eye-hand dominance, namely, right handed and left eyed.

Family data. The parents of these exceptionally creative girls were found to possess a number of common characteristics. First, they were all relatively old at the time of the subject's birth. All of the parents were at least 25 years old when the subjects were born, while seven of the mothers and nine of the fathers were 30 years of age or older. This finding is in agreement with studies of genius (Bowerman, 1947; Ellis, 1904) which reported a greater incidence of older parents for especially gifted individuals than for normal individuals. In regard to family background of the parents, a number of the girls reported that their parents came from rather large families, with eight mothers and six fathers listed as members of families with four or more children. Only one mother and one father were only children.

In general, the level of parental education was found to be above average; four mothers and eight fathers were college graduates, while four fathers possessed graduate degrees. The college majors for the mothers were one in art, one in English, and two in education. The girls almost invariably reported that their mothers had worked full- or parttime outside the home since their marriage. At the time of the study, seven mothers were continuing to combine a career with marriage, a finding which suggests that they were highly resourceful, energetic women. Most of the fathers were described as happy in their work, and were engaged in the following occupations: one in medicine, one in law, one in accounting, one in photography, four in teaching (English-3, sociology-1), and two in blue collar occupations.

With respect to leisure time activities, the girls described their parents as being much more interested in cultural-intellectual pursuits than in participating in social-civic organizations or in organized sports. It has been a common finding in the literature that parents of creative persons tend to have a higher

level of education and provide their children with cultural advantages at home (Green, 1957; Roe, 1953). In the present study, the parents tended to read a great deal and most of the girls reported that their parents averaged one book a month in addition to a number of magazines and newspapers. Their parents attended a variety of cultural activities, including plays, operas, and concerts, and many parents played a musical instrument. Moreover, three mothers and seven fathers found time to engage in hobbies of a creative nature, e.g., art, writing, and/or dramatics, thereby providing their children with role models of creative behavior.

The finding that more fathers than mothers offered their daughters models of creative behavior suggests that the creative subjects may have identified more with their fathers than with their mothers. Several other findings support this hypothesis. For instance, when asked which family member or members they most resembled in temperament, 3 of the 10 girls listed their fathers alone while only 1 girl selected her mother alone. In a similar vein, when asked which parent or parents taught them most about art, 4 girls listed their fathers, 3 selected both parents, and the remaining 3 listed neither parent. When asked which parent or parents taught them most about books, half the subjects selected their fathers and only a third listed their mothers. Finally, the results of the Adjective Check List (presented in a later section) also reflect a close masculine identification.

Turning to child rearing practices, the girls stated that their parents most characteristically used scolding to discipline them when they were children, although their parents' discipline tended to be inconsistent. At the time of the study, the subjects said that about the only discipline they received from their parents was a curfew on late hours. Almost invariably the girls mentioned that they felt that the best disciplinary technique for parents to use with teenagers was to discuss the problem with them and to use reasoning rather than resort to threats, scolding, or loss of privileges.

Feeling somewhat aloof from their parents, the subjects stated that they rarely if ever engaged in family group activities. In his study

of creative architects, MacKinnon (1962) also noted a lack of intense emotional closeness or intimacy with one or both parents. MacKinnon found that this emotional distance was more frequently seen in the relationship with the opposite sex parent, but was often characteristic of the relationship with both. Similarly, Roe (1953) observed that a "feeling of apartness from others [p. 48]" was conspicuous in the life histories of her eminent scientists—a finding which seems related to their independent and autonomous life styles.

A lack of strong career channeling pressures from parents was apparent in the responses of the subjects just as it was in the life histories of MacKinnon's creative architects. Although the girls mentioned that their parents considered the girls' greatest talent to be their creative ability in art or writing, they said that their parents were not pressuring them into attending specific colleges or selecting certain careers.

Seven of the 10 girls were found to be either the younger or middle child from families with two to three children. One girl was an only child and one came from a large family (five or more children). Six girls indicated that they had at least one older brother, while only three reported an older sister. Half of the girls considered one or more of their older siblings to be both highly intelligent and quite creative. Several siblings received Westinghouse Science Awards, and others created films, wrote poetry, etc. It would seem, then, that the home backgrounds of many of the subjects contained several models of creative behavior.

Education. The majority (7) of the girls indicated that they could read before entering grade school, an achievement which they attributed to the fact that their mothers often read to them and encouraged them to read for themselves. This early reading may also be related to the fact that 6 of the 10 girls attended nursery school.

The favorite elementary school subjects of the girls were reading (7), composition (9), and art (7). Seven of the 10 girls received a school or city-wide award in one of these subjects. Most of the subjects reported that mathematics was their most difficult and

least favorite subject in elementary school. Half of the subjects indicated that they skipped a grade in elementary school and half stated that they attended more than one grammar school.

In high school, the subjects showed a comparable interest pattern in their courses by listing as their favorite subjects English composition (10), literature (8), art (7), and poetry (6). Their continued dislike for mathematics was apparent in the finding that 8 girls received their lowest mark in this subject while half of the girls failed it at least once in high school. The frequent emotional reaction of the girls to mathematics was intense as reflected in the following comment by one of the girls: "I always had trouble with math and was petrified when the teacher started it."

Notwithstanding this difficulty with mathematics, the girls reported that their school work came easily and they generally studied less than 10 hours a week in high school. Evidence of their superior scholastic aptitude is also seen in the finding that the median grade point average of the girls in high school was 89.5, while their median percentile rank on the Preliminary Scholastic Aptitude Test was 98 percent for verbal and 87 percent for math. Seven of the girls also received a high school award for academic and/or creative achievement. Although the median scholastic rank of the girls in their senior year of high school was in the top 10 percent, their rank varied from the top 1 percent to the lower half.

Pursuant to Roe's (1953) finding that most of her group of eminent scientists had been exposed to a teacher who allowed them to find things out for themselves, the girls in this study were questioned at length about their elementary and secondary school teachers. The positive influence of a number of teachers in their development was apparent in the finding that 7 girls reported that one or more of their elementary school teachers took a personal interest in them, while 9 girls stated that they regarded one or more of their high school English or art teachers to be an "outstanding teacher." When asked which traits they associated with an outstanding teacher, most (8) of the girls listed "enthusiasm for the subject taught." Among the other traits men-

tioned were: (a) the ability to make a subject come alive; (b) personal interest in the student and belief in his ability; (c) sincerity and honesty, especially in acknowledging personal mistakes or information gaps; (d) a good listener who encourages students to express themselves; and (e) a likeable person, i.e., someone who is warm, kind, and concerned.

In the area of extracurricular activities, 7 of the 10 girls reported that they had a significant part in an elementary school play. At the high school level, the girls became quite active in extracurricular events, with 8 girls participating in three or more activities. Almost all the girls (9) engaged in extracurricular activities that encouraged creative expression such as the art club, school newspaper, or yearbook, and they planned to continue these creative endeavors in college. The girls' extracurricular activities also provided an outlet for their leadership drives as evidenced in the finding that 7 girls achieved the highest position of leadership in these activities, such as editor or president.

All of the subjects planned to attend college. Their anticipated college majors were English (5), art (2), and the social sciences (3). Half the group intended to seek a graduate degree after college, although only three girls had definitely decided on a career. Most of the girls expressed an interest in becoming writers, artists, or teachers. Many of the girls recalled having more unusual career preferences in elementary school, such as jockey, veterinarian, actor, zoologist, and archeologist. Getzels and Jackson (1962) also found that creative children tend to express preferences for rather unusual careers.

Leisure time activities. The leisure time activities of the girls centered around their strong interest in cultural-intellectual activities—especially reading—and their desire for creative expression. Ever since they first learned to read—which was quite early—the girls reported that they were avid readers. Two of the girls remarked that they tried to read all of the children's section of the library; a third mentioned that she always concealed a book under her desk in elementary school to read whenever the lesson became dull. Describing themselves as rapid readers, the girls

indicated that they currently read between 40 and 100 books a year. Their reading interests clustered around poetry (7), classics (6), contemporary fiction (6), humor (5), and historical novels (4). Among the variety of newspapers and magazines read at home, the girls most frequently listed the *New York Times*, *Life*, and *The New Yorker*. The sections of the *Times* that they regularly read were: Book Review (10), World News (8), Editorials (7), Letters-to-the-Editor (5), and Entertainment (5).

In addition to their extensive reading, the girls engaged in a variety of cultural activities, including regular visits to art galleries, museums, and operas. Their favorite artists were Chagall, Klee, and Van Gogh. All the girls played musical instruments, either the piano or guitar. Their strong musical interest was also evident in the finding that each girl personally owned a variety of records and spent an average of five hours a week listening to them. The girls mentioned that their record collections included the following types: classical (10), folk (9), popular (7), and jazz (5). On the vocal side, 8 of the 10 girls reported that they were members of a high school glee club or chorus.

Another strong leisure time interest of the girls was creative self expression. Every girl stated that she had one or more creative hobbies, such as art, writing, or film making, which began in early childhood and continued to the present. Half of the girls stated that they had invented a childhood toy or game when they were quite young; one girl constructed a time machine out of cardboard boxes so that she could take her younger brother back in time to fight dinosaurs or into the world of the future. Almost all the girls reported that their parents framed one or more of their drawings while they were in elementary school. Half of the group had received formal lessons in the arts or crafts and almost all the girls owned a variety of artist's supplies. Composing verses for personal enjoyment was also a popular activity with the girls, as 6 girls indicated that they engaged in this activity quite often. On the average, the girls spent 7 hours a week on creative hobbies. These hobbies were obviously very meaning-

ful and enjoyable to them, since they all reported that they often became so engrossed in a creative project that they would miss a meal and/or stay up very late.

When asked how they first became interested in creative self expression, their answers were quite varied. Three girls attributed this interest to a school teacher who inspired and encouraged them. Two girls thought that their wide reading resulted in a desire to express themselves imaginatively, while one girl related it to the fact that her parents recognized her talent and encouraged her to develop her ability by formal lessons. Two other girls said that the creative hobbies of their parents sparked them, while the final two girls responded that they just naturally loved to draw and doodle.

The girls also found time to spend 5 hours a week watching television, with old movies and the educational channel listed as special favorites. An equal number of hours a week was spent on chores; the chores most frequently listed were cleaning their own room (10) and caring for pets (8). In the light of their busy schedules, it is not surprising that the girls seldom spent their free time sewing, card playing, working outside the home, or participating in sports. The few athletic activities that they did engage in were swimming and horseback riding.

Social interests. Although the girls devoted much of their energy to intellectual, cultural, and creative activities, they did not fulfill the popular stereotype of the creative person as a beatnik or social recluse. On the contrary, a number of girls stated that they were often leaders of their childhood group activities. In general, the girls tried to cultivate a small group of friends rather than a wide circle of acquaintances. Eight girls reported that they had two or more close friends in elementary school, while they all said that they had at least one close friend at the time of the study. When asked which traits they admired most in their friends, the girls responded: intellectual and artistic ability, spontaneity, unconventionality, sensitivity, and naturalness. In this connection, one girl remarked, "Most of my friends are uninhibited and spontaneous. They're a little insane, and very recently I re-

alized they definitely have emotional problems. But they're more interesting people."

The girls were obviously attracted to many of their friends because of shared interests. Accordingly, 7 girls stated that they had one or more close friends who were considering a career in art, writing, or acting. Feeling closer to their friends than their parents, 7 girls mentioned that when they had personal problems they typically turned to their friends for help; only two girls said they went to their parents, while one responded that she usually tried to solve her own problems. With respect to heterosexual interests, the girls stated that they were currently dating about once a month, usually with a different boy. Most of the girls indicated that they planned to wait until their early or mid-twenties before marrying in order to pursue their careers and travel interests.

Fantasy experiences. Inspection of the autobiographical reports of the girls revealed that they had enjoyed a rich fantasy life which began in early childhood and had continued to date of the study. For instance, 7 of the 10 girls recalled that they had imaginary companions in early childhood. They mentioned that they created these imaginary creatures either for relief from feelings of loneliness or for the thrill of having strange and unusual friends. The imaginary companions were usually anthropomorphized animals such as horses, dogs, and squirrels; the girls also imagined such creatures as a pocket elf, spoon faces that talked, a masked stranger with whom one shared strange adventures in the clouds, and animated nursery rhyme characters depicted on the kitchen linoleum.

At the time of the study, the girls indicated that they still engaged in a variety of fantasy activities, especially daydreaming. The topics of their daydreams were careers and dating. A number of girls reported daydreams in which they had achieved a very high level of success, such as being selected to conduct a large symphony orchestra or becoming famous after the publication of a book or release of a film. The girls also recalled a number of very vivid night dreams, many of which had a rather terrifying, Kafkaesque quality. For example, one girl related the following scene from an early childhood dream: "I was hang-

ing by a rope on a high wall above a sea of quicksand and my sister was on the shore heading toward me with an awful look on her face...but she never reached me." Another girl recalled a recent dream depicting a jungle scene in which "Nazi officers with shiny uniforms were herding a group of Jews to be killed. One came up to me and said he'd have to kill me." Chase themes and themes of being lost in strange places were common features of their night dreams. These dreams suggest that beneath their confident, self assertive appearance, many of the girls had deep seated feelings of insecurity and anxiety. Similar feelings were found in the projective test data.

Apart from their vivid dreams, the girls reported other unusual, imaginative experiences. A synaesthesia experience—an event in which a stimulus presented in one sense mode seems to call up imagery in another mode as readily as that of its own—is apparent in the following comment by one of the girls: "When I think of somebody I often smell something associated with the person. Like when I think of a particular boy, I always smell lanolin soap." Many of the girls reported what seemed to be a *déjà vu* experience, a feeling of having lived through an event before while knowing that one never has. For example, several girls remarked that when they walked down a strange street they often had the feeling that they had been there before and that they could describe what the houses on the street would look like before they saw them.

The above findings support McKellar's (1957) observation that the incidence of synaesthesia in a college population is only about 20 percent, while about 70 percent of college students will report the *déjà vu* experience. Several of the girls in this study also described a precognition experience in that they "always see foreshadowing of things." One girl said it was like being reincarnated and it made her feel "kind of weird and scary." In summary, the creative girls in this study seemed quite open to their irrational thought processes, including images, feelings, and premonitions.

Personality and Projective Test Data

To supplement the preceding biographical data, the girls' responses on a variety of per-

ceptual, personality, and projective tests were analyzed. First, the median scores of the 10 girls on the Barron-Welsh Art Scale and the Franck Drawing Completion Test were not substantially different from the average scores of the larger creative groups from which the girls were selected (Anastasi & Schaefer, in press; Schaefer, 1968). However, the personality profile of the 10 girls on the Adjective Check List (ACL) was quite deviant from the larger group results previously reported (Schaefer, 1969). In addition to their self evaluations on the ACL, the girls in the present study were asked to fill out an ACL to describe each of their parents. The median scores for the three separate administrations of the ACL (self, mother, and father) are presented in Figure 1. Inspection of Figure 1

indicates that the girls' ACL self evaluations resemble their descriptions of their fathers more than their mothers, which again suggests a closer identification with the opposite sex parent.

The ACL evaluations of the girls indicated that they regarded both themselves and their fathers as much more independent, assertive, and impulsive than their mothers. Accordingly, the girls' descriptions of themselves and their fathers yielded high scores on the ACL scales of aggression, autonomy, counseling readiness, exhibitionism, and self confidence, and produced lower scores on defensiveness, deference, and personal adjustment. Since this configuration of scores has been found to be positively related to creativity (MacKinnon, 1965), it supports the previously reported bio-

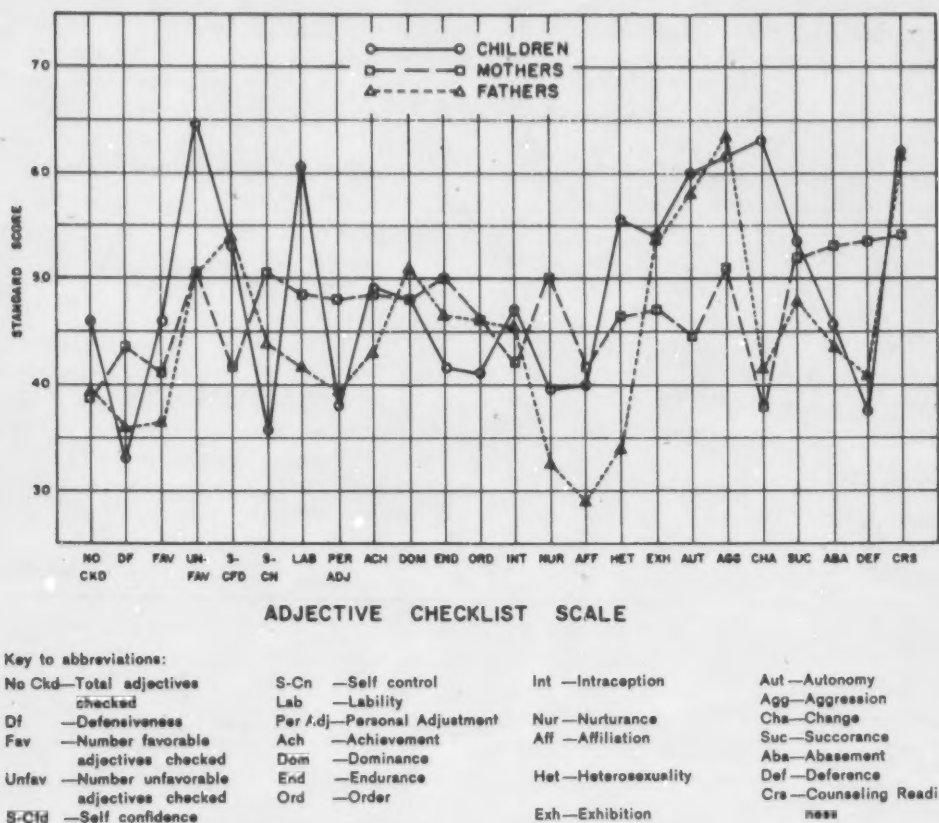


FIGURE 1. Adjective Check List profiles for children and parents.

graphical finding that the girls' fathers tended to engage in more creative activities than their mothers. On a few scales—affiliation, achievement, and succorance—they viewed themselves as closer to their mothers than fathers, while they were quite deviant from both parents and from the larger creative groups from which they were selected on these scales: high scores on number of unfavorable adjectives, lability, heterosexuality, and change; low scores on self control, endurance, and order.

A sharper picture of the personality traits of the girls and their parents resulted from an analysis of the individual adjectives on the ACL. For example, the following adjectives were most often chosen by the girls to describe their mothers: dependable (9), capable (8), temperamental (7), and intelligent (7). The adjectives most frequently used to describe their fathers were: intelligent (8), touchy (7), rational (7), inventive (7), fair minded (7), and clear thinking (7). The adjectives found in Table 1 represent the ones most often selected by the girls to describe themselves. Inspection of Table 1 reveals that the adjective "imaginative" was one of the three adjectives checked by all 10 girls. MacKinnon (1965) also found that this adjective was highly characteristic of his most creative group of architects in contrast to the adjectives

"conscientious" and "civilized," which were most often selected by his less creative groups. MacKinnon related this finding to Rank's theory concerning the role of the self image in determining a person's behavior and the exercise of his will.

In order to supplement their ACL self descriptions, the girls were asked to write a brief description of what they liked best and/or least about themselves. These brief evaluations, presented below, highlight the value the girls' place on their sensitivity to the feelings of others. These self descriptions corroborate the findings of other investigators who have noted that creative persons are "able to closely identify with the feelings and expectations of other human beings [Taylor & Williams, 1966, p. 125]."

Subject No. 1. I was quite fearful as a child, afraid of bright lights, eyes on certain people, and so on. I still tend to be afraid and mistrustful. I'm trying to accept myself and believe in myself. I can't think of anything I like best about myself; I'm constantly searching for something but I don't know what it is.

Subject No. 2. I lack confidence in my art and intellectual ability and my ability to articulate what I want to say. What I like best about myself is my sensitivity to other people and my ability to perceive what they're thinking and why they do things.

TABLE 1
Individual Adjectives Most Often Selected as Self Descriptive by the 10 Girls

Number of Girls Selecting Adjective				
10	9	8	7	6
changeable	curious	alert	active	capable
imaginative	emotional	artistic	adaptable	cheerful
interests wide	independent	attractive	adventurous	cynical
	intelligent	dreamy	appreciative	enthusiastic
	inventive	impulsive	energetic	excitable
	sensitive	insightful	feminine	frank
	warm	moody	friendly	gentle
		original	healthy	humorous
		reflective	high strung	idealistic
		sentimental	individualistic	mischievous
		understanding	progressive	outgoing
			rebellious	responsible
			resourceful	serious
			restless	versatile
			sarcastic	witty
			spontaneous	
			temperamental	

Subject No. 3. What I like best about myself has something to do with sympathy or empathy with people. I'm the one everyone pours things out to. I learn a lot by it.

Subject No. 4. I'm shy and used to stay by myself in elementary school. I now doubt my religious beliefs because of the wars and my parents' lack of faith. But my creative writing teacher has made me doubt my doubts. The thing I like best about myself is my liking for people.

Subject No. 5. I was a brat in elementary school, very outspoken and had temper tantrums and made up sarcastic songs about the teachers. However, I was a very sensitive child and got very upset and showed it. I lack confidence in my ability to write and socialize but I want to do these very much.

Subject No. 6. I only had a few friends in elementary school but now I guess as many like me as hate me. I hate people and should be hated in return. It makes others feel good to have a prodigy like me in class. The thing I like best about myself is that people can talk to me. I'm a good listener. I like my sexy voice too.

Subject No. 7. Like others my age, I tend to distrust people a lot now and don't know who my friends are. What I like best about myself is my liking for self; like a friend following me around, I admire my different traits.

Subject No. 8. I'm not talkative enough and lack confidence in my ability to keep up a conversation. But I also like myself too much and tend to be too contented.

Subject No. 9. I'm sometimes too sensitive. If I'm in a funny mood and somebody makes a joke about me I will really take it to heart and I know I shouldn't but I can't help it. I know a lot of people but have very few friends. I'm choosy. I guess I like the way I am.

Subject No. 10. I'm selfish and stubborn. If I'm told to do something I say no and won't do it. I lack confidence in my ability for self discipline. I get angry at how selfish and conceited I am. What I like best about myself is my ability to get along with people and yet be independent and manage my own affairs. I am able to be detached and realize happiness.

Projective test data. The global evaluations of the projective test data by the two clinical psychologists were found to be in substantial agreement. As might be expected, most of the protocols contained signs of an identity conflict, particularly in regard to femininity. Naturally bright and self assertive, many of the

girls seemed to be experiencing difficulty assuming a passive, subservient female role. Signs of masculine protest were clearly in evidence, with males portrayed as far more likely to receive tangible recognition for their achievements. Males were also pictured as immature, inept, and insensitive; they were far from the sources of strength the girls would like them to be.

An unresolved conflict centering around dependency versus autonomous needs was also apparent in many of their TAT stories. Parents were characterized as exerting strong pressures toward conformity rather than recognizing their children's needs for independence. Consequently, stories containing interactions with authority figures were punctuated with ambivalent attitudes and vacillation between feelings of resentment and a sense of obligation and guilt. Unable to resolve this dilemma, several girls projected feelings that life was rather vacuous and meaningless. Several other girls related quite gloomy fantasies centering around the futility of living and inevitability of death; they ended these stories with a longing to return to a safe, simple, care-free childhood level. In brief, then, the autonomy and achievement needs of the girls were found to be in conflict with their needs for parental and peer group acceptance. The fruits of these unresolved conflicts were feelings of resentment, guilt, and anomie.

In regard to stylistic factors, the thematic material of the girls encompassed the three expressive styles defined by Tooley (1967)—flamboyant, impersonal, and constricted. The majority of the TAT stories reflected the first of the three styles (flamboyant) which is typical of young adolescents. According to Tooley (1967), this style exhibits a capacity for melodramatic and personal self expression. More specifically, the stories were replete with dramatic dialogue, soap opera crises, ironic twists, and "exclamation point" statements. To some extent, this flamboyant style probably represented a facetious reaction by the girls to pictures that they obviously considered trite, contrived, and outdated. One girl commented that the pictures looked like scenes from old class B movies. About a third of the protocols, on the other hand, exempli-

fied an impersonal, expressive style, with emphasis on intellectual control, detachment, and a rather Olympian, condescending stance.

In brief, the projective data indicated that the wellsprings of high intelligence, vivid imagination, and independence of thought which nourished the girls' creative powers also seemed to contribute to identity and interpersonal problems for them. The girls seemed torn between their desire to be feminine and socially acceptable and their yearning for independence and high achievement.

Summary and Conclusions

The most prominent findings of this study, together with some implications, are the following:

1. The creative achievement of these high school girls was foreshadowed by creative work in both elementary school and early childhood. It would seem, then, that the capacity for superior creative work can be detected very early in life. This early activity seems to set the stage for later development by providing what Whitehead (1929) termed an initial momentum.
2. The creative girls obviously found their creative activities personally meaningful and satisfying so that they were able to persevere at them. Their creative skill developed gradually with repeated exercise and frequent reinforcement by both parents and teachers.
3. A variety of role models of creative behavior was available for the girls to emulate, including parents, siblings, teachers, and friends.
4. The parents of these girls were characterized by their advanced age, high educational level, and interest in cultural-intellectual pursuits.
5. While the girls seemed to identify more with their fathers than mothers, they appeared emotionally independent of both parents.
6. The girls learned to read at an early age and had been avid readers ever since.
7. Notwithstanding their particular difficulty with mathematics, the girls were

able to achieve a high level of academic success with little effort. Art and writing were listed as their favorite subjects in both elementary and high school.

8. The girls were exposed to a number of outstanding teachers.
9. Quite active in extracurricular activities that offered opportunities for creative expression, the girls often achieved the the highest positions of leadership in these activities.
10. Many of the girls were considering a career in either art or writing and several girls reported dreams of very high achievement in these fields.
11. All of the girls enjoyed hobbies of a creative nature, many of which were started in early childhood.
12. In general, the girls preferred to cultivate one or two close friends rather than a wide circle of acquaintances.
13. Quite open to fantasy and feelings, the girls reported several unusual mental phenomena, including imaginary companions, synaesthesia, and déjà vu experiences.
14. The multifaceted self concepts of the girls reflected a number of traits commonly associated with the creative person, including openness to change and impulse expression, imagination, curiosity, aggressiveness, autonomy, and emotional sensitivity.
15. The projective material revealed unresolved conflicts centering around femininity and autonomy.

In conclusion, the creative girls in this study reported a number of common experiences, interests, and traits which, in aggregate, reflect a creative style of life. Among the experiential factors which seemed to make a significant contribution to the early development of this life style were: noncontrolling parents with strong cultural-intellectual interests, friends and relatives who provided role models of creative behavior (father most prominent), outstanding teachers, and awards for creative achievement. Although the girls gave signs of a need for high achievement, they seemed uncertain of actualizing their potential because they lacked confidence in their ability and

they appeared to have deep-seated conflicts in regard to masculinity-femininity and autonomy-dependency needs. Consequently, for these 10 girls to achieve a full realization of their creative potential they will need the enthusiastic support of significant persons in their lives.

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Creative Young Women in Today's World

Abstract: Data from a 12 year followup of a longitudinal study of a creative behavior were analyzed in such a way as to give clues concerning creative young women in today's world. The subjects were students at the University of Minnesota High School (grades 7 through 12) in 1959. Followup data were obtained from 117 women and 119 men. A canonical correlation of .51 was obtained for the creativity predictors and three criteria of adult creative behavior; one of .59 was obtained for the men and one of .46 for the women. There were no differences in any of the creativity predictor measures for the subjects except for elaboration (favoring the women) nor in either of the three criteria of adult creative behavior. Number of children negatively influenced performance on all three of the criteria for the women but only the quality of the creative achievement and creativeness of aspirations of the men. The more creative women tended more frequently than their less creative peers to be involved concurrently in careers and families while the less creative women more frequently limited their involvement to their families. The more creative women tended to find their highest creative achievements in writing, educational innovation, research and new theory, and music.

IT is commonly believed that women are less creative than men, creative only in particular fields such as literature and art, unpredictable, and not permitted by society to attain their creative potentiality. It is also commonly acknowledged that the past decade has been characterized by increasing rates of change. Among these changes has been society's treatment of girls and women. If common beliefs about women were valid in the past, are they still valid?

There is little doubt that the attitudes and treatment accorded girls and women by a society influence their creative development and behavior. Beginning in 1958 and continuing into the early 1960's, it was found that boys in the United States consistently excelled girls in most measures of originality and that girls excelled boys in ability to elaborate ideas and in most verbal measures of creative thinking (Torrance, 1962, 1965; Torrance & Aliotti, 1969). In India, however, boys excelled

girls on originality and verbal measures on the same tests (Torrance, 1967; Raina, 1969). There were logical explanations of these findings in terms of differences in the ways the two societies treated boys and girls.

In the 1960's and into the 1970's, sex differences in measured creative thinking abilities began to fade out. A trend towards a change was first detected in 1960. In 1959, this author (Torrance, 1963) had used a collection of science toys in an experiment with five person groups of children in grades 3 through 6. In 1959, the boys had produced a larger number of hypotheses about the toys and their functioning than the girls and assigned greater hedonic ratings to the activity. A year later, in the same school with essentially the same children, there was no difference between boys and girls in the number of hypotheses produced nor in the hedonic ratings assigned the activity. There still persisted among these children, however, the belief that the hypotheses of the boys were more valid than those of the girls.

While sex differences in measured creative thinking abilities have continued to

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appear, several recent studies show no sex differences (Cheek, 1970; Kaltsounis, 1971; Phillips & Torrance, 1971). At least findings of no sex differences are beginning to appear frequently enough to suggest that social attitudes concerning the differential creative development of boys and girls is changing. In the light of these findings and of the vigor of women's liberation movements of recent years, it seems important to find out how creative young women are faring in today's world and how well they are realizing their creative potentialities. Data from a 12 year followup of the predictive validity of the *Torrance Tests of Creative Thinking* (Torrance, 1966) provide an opportunity for such an inquiry.

Procedures

A long range predictive validity study of the *Torrance Tests of Creative Thinking* was initiated in September 1959. These tests were administered to the total population of the University of Minnesota High School (grades 7 through 12). A majority of the subjects were the children of professional and business people. However, the enrollment in 1959 included a large block of public school students from a nearby district lacking a school building. The mean intelligence quotient of the 392 students for which there were complete data was 118 and the mean percentile rank on the *Iowa Tests of Educational Development* was 84 on national norms.

Followup data were obtained during the winter and spring of 1971 from 117 of the women and 119 of the men tested in 1959. The followup questionnaire requested information concerning marital status, number of children, occupation, spouse's occupation, highest level of education attained, undergraduate colleges and graduate schools attended, honors, employment experiences, post high school creative achievements and activities, three most creative post high school achievements, and a statement of aspirations. Generally, subjects supplied rather complete data, rich in information about what has been happening to young people now between the ages of 25 and 31.

The creativity tests were scored in 1959 according to the scoring guides then in use

for the following variables: fluency (number of relevant responses), flexibility (variety of categories of responses), inventive level (development of inventions which show a stride forward; creative strength; something unusual, remarkable, or surprising; novelty of implementation; prior failure and skepticism; etc.), and elaboration (amount of detail used to describe how ideas would be executed). In 1961, all tests were rescored for originality according to a guide developed at that time. The interscorer reliability of each of the scorers in all cases was in excess of .90 for all variables.

A measure of quantity of creative achievements was obtained by adding the number of creative achievements checked by each subject. The checklist called for reports of such achievements as the number of poems, stories, dramas, or novels published; musical compositions published; scientific and professional papers published; research grants obtained; patents and inventions; business or professional organizations created; awards in art, literature, music, or leadership; art exhibitions; and instructional materials created. The measure of quality of creative achievement was based on the ratings of five expert judges of the descriptions of the three most creative achievements reported by subjects. The measure of creative aspirations was based on similar ratings of the statements of the subjects concerning what they would most like to do in the future, assuming the necessary talent, training, and opportunity. The mean reliability coefficient of the five judges was .91.

Results

Sex Comparisons

Table 1 presents the means and standard deviations separately for men and women on the major creativity measures, intelligence, and achievement. It will be noted that there are no sex differences in fluency, flexibility, inventive level, originality, intelligence, and achievement. The only statistically significant difference is for elaboration in favor of the women.

Sex comparisons on the three criteria of adult creative achievement are presented in Table 2. The means for all three crite-

TABLE 1
Means and Standard Deviations of Creativity, Intelligence, and School Achievement
Variables of Men and Women as Assessed in 1959

Creativity variables	Men (N=119)		Women (N=117)		t ratio
	Means	SD	Means	SD	
Fluency	79.1	29.3	85.5	23.8	-1.8301
Flexibility	35.6	11.9	37.6	9.6	-1.4326
Inventive level	37.3	17.8	39.9	16.3	-1.1633
Elaboration	18.5	7.7	21.3	7.2	-2.8676*
Originality	103.6	48.8	102.9	39.1	0.1044
Intelligence quotient	122.6	15.5	122.0	15.6	0.4100
Scores on Iowa Tests	83.3	20.6	85.5	14.2	-0.9545

* Difference is significant at the .01 level.

ria are almost identical, indicating that these young women have been attaining their creative potentialities to as high a degree as the men, at least by the criteria developed for this study.

Prediction of Adult Creativity

By combining the scores on the creativity test battery to predict the combined creativity criteria a canonical coefficient of correlation of .51 was obtained for the full sample. A canonical correlation of .59 was obtained for men alone and one of .46 for women alone. While the predictive validity of the tests is significant at better than the 1 percent level for both men and women, the finding gives some credence to the belief that women are less predictable than men.

Table 3 provides more detailed information concerning the predictive validity of the specific creativity variables along with coefficients of correlation of the criteria of creative achievement and aspiration with number of children, amount of higher education, number of post high school honors, and number of jobs held. It will be noted that all of the coefficients of correlation involving the creativity variables as predictors are significant at better than the

1 percent level of confidence. In general, however, those for the women are a shade lower than those for the men. This trend is accentuated for intelligence quotient as a predictor of creative achievement, especially for quantity of creative achievement. The creativity measures are consistently better predictors of the women's adult creative achievement than is the measure of intelligence.

Number of children is related to adult creative achievement in interesting ways. Among men, number of children is unrelated to quantity of creative achievement but is negatively related to quality of creative achievement and the creativeness of aspirations. Among women, number of children is negatively related to quantity as well as quality of creative achievements and creativeness of aspirations.

Amount of higher education, number of post high school honors, and number of jobs held are significantly related to all three criteria for both men and women at about the same levels of significance.

Career Patterns

To pursue further the clue concerning the apparent negative influence of number of children on the creative achievement of these young women, an analysis of their

TABLE 2
Means, Standard Deviations, and t ratios for Men and Women on Three Criteria of Adult Creativity

Criteria of creativity	Men (N=119)		Women (N=117)		t ratios
	Means	SD	Means	SD	
Quantity of creative achievements	15.3	13.1	15.0	13.9	0.2011
Quality of highest creative achievements	28.3	9.4	28.3	7.8	-0.0026
Creativeness of aspirations	28.7	9.0	29.3	7.5	-0.5134

TABLE 3

Correlation of Predictors of Creative Achievement with Adult Creativity Criteria for Men and Women

Predictors	Men (N=119)			Women (N=117)		
	Quantity	Quality	Aspirations	Quantity	Quality	Aspirations
Fluency	.31*	.29*	.27*	.28*	.33*	.27*
Flexibility	.32*	.31*	.27*	.25*	.32*	.23*
Inventive level	.42*	.43*	.42*	.28*	.41*	.32*
Elaboration	.27*	.34*	.37*	.27*	.35*	.29*
Originality	.41*	.45*	.45*	.37*	.40*	.30*
Number of children	.00	-.21**	-.26*	-.20**	-.23*	-.29*
Amount of higher education	.26*	.51*	.55*	.24*	.55*	.49*
Number of honors	.27*	.44*	.43*	.19**	.33*	.30*
Number of jobs	.37*	.32*	.28*	.43*	.38*	.42*
IQ	.24*	.40*	.37*	.06	.29*	.18**

* Significant at the .01 level.

** Significant at the .05 level.

career patterns was made according to level of creativity as assessed in 1959. Level of creativity was determined by dividing subjects at the median within class and sex on the combined creativity score obtained in 1959. The results are shown in Table 4.

The career patterns of the higher creative group are characterized by concurrent involvement in career and family in contrast to involvement in family only among the lower creatives. The tendency for the lower creative group to pursue careers to the exclusion of family is as strong as that of the higher creatives.

To give a picture of the creative outlets of these young women in today's society, an analysis was made of the nature of the achievements reported by subjects as their three most creative achievements. The results of this analysis are reported in Table 5 separately for the high and low creative women.

The higher creative young women in

this study more frequently than their less creative peers reported their highest attainments in such areas as writing, creating educational materials, scientific research, and music. The lower creative group more frequently rated highest their achievements in family, child rearing, and marriage accomplishments. Civic projects, editorial and advertising writing, teaching, visual arts, fashion and costume design, and human relations are cited with about equal frequency by both groups.

Individual Patterns

From the data in Tables 3 and 4 a variety of career patterns and areas of creative achievement seems to be open to young women in today's society. This impression is reinforced by examination of individual responses. Some of these young women, however, believe that there are severe restrictions placed upon their creativity by society. This is evidenced in a comment by Jane, one of the most creative women of the study as assessed in 1959. She completed her doctorate in anthropology from one of the top five graduate schools in the United States.

I've been sort of a failure regarding creativity; in fact, it is best to stifle creativity if one wants to be an academic, as I once did. I just studied a lot and won lots of scholarships, but these come by being submissive and suppressing one's creativity. Most of the "creative" things I do thus fall in the traditional women's domains of cooking and sewing—doing things with my apartment, etc. Since these are not socially valued, I tend to forget them very quickly.

TABLE 4

Family and Career Patterns in 1971 According to Two Levels of Creativity

Type of involvement	High creatives (N=58)		Low creatives (N=59)	
	N	Percent	N	Percent
Family only	3	5.1	15	25.9
Career only	17	28.8	21	36.2
Family and career concurrent	31	52.6	16	27.6
Career interrupted by family	8	13.5	6	10.3

Note: Overall chi square = 13.484; $df = 3$; $p < .01$

TABLE 5
Nature of Most Creative Achievements as
Reported in 1971 According to Two
Levels of Creativity

Area of achievement	High creatives (N=59)		Low creatives (N=58)	
	N	Percent	N	Percent
Family, children, marriage	10	16.9	22	37.9*
Civic projects, human relations, organization	12	20.4	12	20.8
Writing (poetry, novels, drama, children's books)	18	30.5	4	6.9*
Writing (editorial, advertising)	8	13.4	6	10.3
Educational innovations	11	18.6	3	5.2*
Style of teaching	13	22.0	9	15.6
Visual arts, photography	16	27.1	17	29.3
Research, new theory, etc.	16	27.1	4	6.9*
Music, composition and performance	5	8.5	0	0.0*
Life style	4	6.8	7	12.1
Fashion, costume design	9	15.3	9	15.6
Architectural design	3	5.1	0	0.0.

* The difference in proportion is significant at .01 level.

This comment and the pattern that it signifies is in strong contrast to that of Mary, a highly creative classmate of Jane's. She too is completing her doctorate at one of the country's top five graduate schools. Whereas Jane did all of her undergraduate work at one university and all of her graduate work at a second university, Mary has attended two undergraduate universities and four excellent graduate schools. In addition, she has taken out time to teach in still another major university and serve as a guide-translator in both Poland and Russia. She sees some of the papers she has prepared in graduate school as requiring genuine creative exertion. She writes that she taught an original course on the culture of the Soviet Union, applying some of the theories of Marshall McLuhan and attempting to involve students in their own discovery processes. She also reports that she has worked out her own system for describing the accentual alterations of Slovenian nouns, achieving economy and accu-

racy without omitting any of the irregular forms. In addition, she sees herself as being creative in such sex legitimate activities as clothing design and sewing, creating her own styles.

Some of the younger creative women of the study, however, have abandoned the more conventional routes pursued by Jane and Mary. Somewhat typical of these is Alice, one of the most creative girls in the ninth grade in 1959. Even at the time she was in high school, she was searching for "holes in her cage." When she was a high school senior, she took three graduate courses at the University of Minnesota because she was bored and restless in her high school classes. She was graduated from a college in the Far West noted for its record of attracting creative students. At the present time she reports her occupation as that of a gypsy. To the questionnaire item on "highest level of education" she inserted the word "formal" before "education." She has obtained grants for making a couple of films and for reorganizing the files of the Civil Liberties Union in a large Far Western city. She has held such jobs as public relations representative, legal secretary, mail sorter, office manager, leather and suede worker, rock music concert promoter, babysitter, congressional campaign office worker, cashier, dope dealer, commune cook, bookstore carpenter, and "general mother." She writes that these have been short time jobs to earn money to stay in school or tide her over hard times—"otherwise, my work is my play." Some of her art work and writings have been published and she has written a book which has not yet been published. She has created original dances and choreography, made films, founded three business organizations, created advertising ideas that have been executed, created original educational materials, and received several awards for leadership. She comments further:

Graduate school and related recognition is *not* creative but rewards toil and persistence. I've gotten "recognition" for academic type achievements, but they don't make me feel at all creative. I do a lot of writing, art work (including etchings), some poetry, design leather and suede clothes and sell them or give them away, do macramé and many other crafts, but

my intent is, I guess, self expression and not publication.

She rates as her most creative achievements one of her films, some of her designs for clothing in leather, and founding a color organ company and a Whole Earth Bookstore, the latter of which is presently thriving and providing a nice asset to the community. She concludes by saying that she would like to teach in some sort of free school and work in film or photo journalism.

Martha, a highly creative seventh grader in 1959, dropped out of high school at about the end of the tenth grade but will be graduated soon from a well known college of art and design. At the time she completed the questionnaire she had just returned from 2 years of study in a European country. About herself she writes as follows:

I was a high school dropout, did not attend the whole last two years of high school. When I was 19 I took the GED exams and got a diploma and was accepted into my present college. I also got married then. I have no children. After my first year of college I did not go back right away; instead I was a cab driver. My level of artistic and academic achievement in college was and still is high. I write—have written many short stories and poems. I play musical instruments. I paint pictures. I solve problems. I cook. I dance. I sew. I knit. I have exhibitions. I diet. I try to look lovely. I am articulate. I can speak two foreign languages. I abhor violence. I still can't spell many words in the English language. I love nature. I can do almost anything with my hands. I am not typical. And what do I have to look forward to? Being a waitress.

She found the impersonality of the questionnaire repulsive and "in bad taste" and wrote a letter instead of completing the questionnaire.

Some of the young women of the study made it clear that they find creative fulfillment in marriage and the rearing of a family. Fairly typical of these is June who was a ninth grader when the study was initiated. She has six children and has thus far completed only 3 years of college. She has, however, attended a foreign university and won top grades in her class at Goethe Institute in Germany. She does considera-

ble writing and has won awards for leadership. About her most creative achievements she writes as follows:

The only achievements I can credit myself with are my children and their behavior and personalities, partly resultant from my role as their mother . . . U-High failed us in a sense by directing their female students solely toward careers in all fields other than domestic. No one ever told us how creative and rewarding the role of mother and wife can be, combined of course with other interests if so desired.

Concerning future aspirations she would like to do something in the medical field, although only in complete coordination with her immediate family and their needs.

Conclusion

From both the statistical and subjective data presented here, it seems clear that our society permits creative young women to find fulfillment in a great variety of ways. There are, however, obstacles to this fulfillment. Some young women focus on these obstacles and decide deliberately to sacrifice their creativity for other rewards. Some of them recognize and accept these obstacles and make deliberate choices to avoid those institutions that are most demanding of conformity and search out other institutions through which they can achieve without sacrificing their creativity. Some of them, particularly those under 26, reject traditional routes to achievement such as doctorates, publication, and the like; commit themselves to diversity; and keep open for themselves a great variety of routes to creative self fulfillment and achievement. Still others reject traditional routes to achievement but are not as successful in attaining success and recognition, yet they continue being creative in a variety of ways. A considerable number of them see the rearing of children and the care of a family as a great creative challenge offering opportunities for self fulfillment. Many of them plan careers outside of the home but only in coordination with the needs of their families. Perhaps one of the reasons that the creative achievement of young women is somewhat difficult to predict is that such a large number of choices are open to them rather than that choices are too limited.

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Intellectual and Academic Characteristics of Fourth Grade Gifted and Pseudogifted Students

Abstract: A group of 32 gifted boys and girls was compared with a group of 32 pseudogifted boys and girls (students misdiagnosed as gifted by their teachers) on the basis of WISC subtest scores and teacher marks attained while students were in the fourth grade. Results showed no significant difference between the gifted and pseudogifted in performance on the WISC coding and arithmetic subtests. A significant difference in teacher grades favoring the gifted in the subject of English was observed; however, no significant differences were observed in other subjects. It is suggested that pseudogifted students may rely, for the most part, on memory in attaining knowledge, whereas the gifted rely not only on memory, but also on other higher cognitive processes.

A GREAT deal of interest is presently focused upon the education of gifted children. Because most programs for the gifted are in the beginning stages, there are many problems which need to be resolved. One of the most crucial is the process of correctly identifying the gifted (Magnifico, 1958; Henry, 1958). Every year a significant number of pupils who are considered gifted by the teachers fail to meet the IQ standards set forth by many school districts. Thus, the criteria used by elementary instructors in identifying gifted children may result in a significant number being misdiagnosed (Stephens and Gibson, 1963).

The purpose of this study was to ascertain differences in intellectual and academic characteristics between two groups of fourth grade students. The first group was composed of gifted children who had scored above the 90th percentile on the California Test of Mental Maturity who were therefore automatically referred for individual testing to determine eligibility for gifted classes. The Full Scale IQ scores for this group on the Wechsler In-

telligence Scale for Children (WISC) were above 119. The second group was composed of pseudogifted pupils whose Full Scale IQ scores were below 120 on the WISC, and below the 90th percentile on the CTMM, but who had been classified as gifted by their teachers. It was hoped that a comparison of the intellectual and academic characteristics might make it possible to identify factors which discriminate between gifted children and those misdiagnosed as gifted.

Method

Using the CTMM and WISC Full Scale criteria, 26 boys and 18 girls were identified as gifted in the fourth grade. From this group 16 boys and 16 girls were selected at random. Using the CTMM, WISC Full Scale, and fourth grade teacher criteria, 16 boys and 31 girls were identified as pseudogifted. From this group, the girls were selected at random, but the boys were not. The mean Full Scale IQ score for the gifted group of 32 children was 126.49; that for the pseudogifted group of 32 children was 110.28.

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Results

The WISC was administered by a certified school psychologist who used nine out of the twelve subtests, omitting mazes, object assembly, and digit span. The effects of intellectual level and sex on measures of these nine WISC subtest performances were submitted to analysis. The only significant *F* tests ($p < .05$) were those indicating differences within the mean scaled scores of subtests and interaction within the mean scaled scores of the subtests and groups. The mean scaled scores and standard deviations for both groups are presented in Table 1.

The results indicate that the mean scaled score of the gifted group on the similarities subtest was higher than mean scaled scores on the comprehension, picture completion, arithmetic, and picture arrangement subtests ($p < .05$). The gifted group's mean scaled score on the comprehension subtest was lower than those of similarities, information, and vocabulary subtests ($p < .05$). The pseudogifted group's mean scaled scores on the coding and similarities subtests were markedly higher ($p < .05$) than those on the comprehension, picture completion, and block design subtests. The comprehension mean scaled score for the pseudogifted group was significantly lower ($p < .05$) than the scores on the coding, similarities, arithmetic, information, vocabulary, block design, and picture arrangement subtests.

In comparing the gifted group with the pseudogifted group, significant and uniform differences ($p < .05$) were found between means on the information, comprehension,

similarities, vocabulary, picture completion, picture arrangement, and block design subtests. The main sources of interaction were due to the mean scaled scores of the arithmetic and coding subtests. It appeared that the gifted group did not have a marked advantage over the pseudogifted group in performing the tasks on the arithmetic and coding subtests.

The gifted group and pseudogifted group were compared on the basis of the quality of responses elicited on the similarities, comprehension, and vocabulary subtests. The frequency of one and two point raw scores obtained by the gifted group and the pseudogifted group are shown in Table 2. The results indicate that the gifted group's ability to define words and make generalizations was significantly higher than that of the pseudogifted group. The choices of synonyms, examples, and functional relationships used by the gifted students in defining words on the vocabulary subtest were better than those chosen by the pseudogifted group. In the similarities subtest the gifted pupils were able to make more abstract generalizations than the pseudogifted students.

Table 3 shows that in the comparison between teachers' grades received by the gifted group and the pseudogifted group, English grades were the only ones significantly related to the WISC IQ score. The gifted students received significantly higher marks in English than the pseudogifted pupils, but no significant differences in grades were noted in the subjects of reading, writing, spelling, science, social studies, and arithmetic.

TABLE 1
Mean WISC Subtest Scores for the Gifted and Pseudogifted Groups

Subtest	Gifted		Pseudogifted	
	Mean	SD	Mean	SD
Information	13.91	1.76	11.34	2.23
Comprehension	12.69	2.58	9.47	1.80
Arithmetic	13.28	1.80	12.19	1.71
Similarities	14.84	2.05	12.53	2.22
Vocabulary	13.91	1.24	11.31	1.44
Picture Completion	13.09	2.83	10.31	2.32
Picture Arrangement	13.66	2.72	11.34	2.43
Block Design	13.81	3.26	11.00	1.92
Coding	13.69	1.89	13.00	2.60

TABLE 2
Data on Chi Square Values Showing Comparisons between the Gifted Group and the Pseudogifted Group on Raw Scores for the WISC Similarities, Comprehension, and Vocabulary Subtests

Subtest	Raw Scores				χ^2
	Gifted		Pseudogifted		
	1	2	1	2	
Similarities	81	118	83	75	4.97*
Comprehension	102	169	91	129	.70
Vocabulary	101	411	115	322	5.83*

* $p < .05$

Discussion

The nature of the interaction between the gifted group and the pseudogifted group on the WISC arithmetic and coding subtests indicates no relationship between total measured intelligence and achievement in these subtests. In fact, it may be concluded that no significant differences existed between the pseudogifted and gifted when compared on the basis of the mean scores of the coding and arithmetic subtests. On this basis, a significant number of the fourth grade pupils who were mediocre in eight of the nine intellectual functions evaluated by the WISC had obtained the same teacher grade equivalent in the subjects of reading, writing, arithmetic, science, spelling, and social studies as a group of students who were significantly above average in all nine intellectual functions evaluated by the WISC.

Guilford (1956) believes that the Wechsler Intelligence Scales have been instrumental in identifying some of the intellectual processes which he discusses in his model, *The Structure of Intellect*. Guilford (1959) also stated that intelligence, according to this model, was composed of 120 different categories of ability. One dimension of his model, intellectual operations, consists of five major types: (a) cognition; (b) memory; (c) divergent production; (d) convergent production; and (e) evaluation. Higher level processes are used in divergent production, convergent production, and evaluation than in the cognition and memory operations (Klausmeier and Good-

win, 1966). Thus, the intellectual operations may be divided into two major groups: (a) memory factors and (b) thinking factors (Russell, 1960).

It may be noted that the mental processes that are operative in the performance of the coding subtests are rote memory, attention span, and ability to concentrate. Performance on the arithmetic subtest is considered to be not only an evaluation of arithmetic fundamentals, but also an evaluation of concentration (Freeman, 1955; Anderson and Anderson, 1956; Wechsler, 1958; Hite, 1952). Thus, according to Guilford's (1956) principles, the pseudogifted group was superior in the memory operations but average in the thinking factors, whereas the gifted group was superior in both the memory and thinking factors.

It may be inferred that the fourth grade teachers' methods of grading achievement were in part based on factors outside the realm of higher cognitive processes. The above inference is supported by the conclusion that the gifted group scored in the superior range on all intellectual functions evaluated by the WISC. The pseudogifted group only scored in the superior range on the coding subtest, which is considered, in part, a test of rote memory. Yet no significant differences exist between the gifted and pseudogifted groups in teacher grades of reading, writing, spelling, science, arithmetic, or social studies.

It appeared that gifted students utilized their full range of intelligence most effectively in grasping English. The teachers' abilities to

TABLE 3
Data on Chi Square Values Showing Comparison between the Gifted Group and the Pseudogifted Group on Teacher Grades

Subject	Gifted Group					Pseudogifted Group					χ^2
	A	B	C	D	F	A	B	C	D	F	
Reading	23	9				19	11	2			2.58
Writing	18	10	4			14	11	6	1		1.94
Arithmetic	19	13				12	15	3	1	1	7.06
Spelling	25	7				25	3	4			5.60
Science	20	11	1			12	15	5			5.28
Social Studies	20	11	1			13	17	2			3.10
English	23	9				13	16	3			7.14*

* $p < .05$

observe significant qualitative differences in this area between the gifted and pseudogifted groups may have been due, in part, to the written compositions and use of subjective written tests demanded in English, which allowed the gifted group to demonstrate their relatively superior ability to use synonyms, examples, and functional relationships. Consequently, it appears that elementary teachers' methods of evaluation could be improved by including more written assignments and essay tests in all academic areas.

Proponents of general education have stated that comprehension, thinking, and higher cognitive processes are necessary for success in academic achievement. Many educators believe that the ultimate goal of education is to teach children how to think (Strang, McCullough, and Traxler, 1961; Monroe, 1951). This study, however, suggests that gifted students in a regular elementary classroom situation may be given little opportunity to employ the full range of their thinking processes. Instructors continue to build upon the thousands of percepts, memories, and concepts pupils already possess. Materials for thinking are provided, but thinking activities, necessary in higher learning, are not needed in attaining superior grades (Russell, 1960).

Theory is generated by knowledge, the gathering of facts. Theory, however, also generates knowledge—an individual who can grasp theoretical concepts generates actual knowledge from these concepts. Insofar as the gifted student possesses mental facilities for understanding theoretical concepts, he generates knowledge from them. Consequently, he may be able to answer questions and solve problems by grasping theories rather than relying exclusively on the memory processes. The elementary classroom teacher, however, may not be interested in how her students arrive at an answer to a question—if the pseudogifted student and the gifted student both score 93 on a factual geography test, each one will receive an A, even though the intellectual processes employed were different. Therefore, the instructor may have extreme difficulty in distinguishing between gifted students and mediocre ones with good mem-

ories because, to her, they are both good students.

All learning is dependent upon memory—that is, memory in its broadest sense. The thinking processes are required as intervening variables in higher types of learning. Thinking, however, cannot take place without memory, because memory provides the material for thinking (Russell, 1960). While this writer is not attempting to lessen the importance of memory functions in the learning process, he is concerned with the implication that elementary teachers may emphasize learning activities and evaluation methods which do not require students to use higher cognitive processes.

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III. Giftedness Among the Culturally Different

Introduction

Bernal (1976) maintained, "to be culturally different means to be behaviorally different in group-identifiable ways" (p. 67). Accepting this definition leads to several important conclusions as we attempt to identify and program for culturally different gifted youngsters. First, his definition confirms the notion that programs including "members of non-dominant ethnic populations, who behaviorally are not very different from students who represent the larger white society, are not really addressing the needs of the culturally different" (p. 67). The inclusion of such children is not necessarily an indication of their ability to operate at higher levels of the cognitive processes or to be creative thinkers; it is only an indication of their ability and/or willingness to assimilate the dominant culture.

Second, Bernal's definition prohibits the use of traditional procedures for identifying gifted students. By the very nature of the behavioral and cultural differences among such children, their abilities will not manifest themselves in standard IQ scores. Attempts to modify the tests themselves or to weigh their scores according to norms for particular ethnic backgrounds and/or economic status clearly miss the point. IQ tests predict scholastic achievement. "Since the schools are culturally biased (because they reflect the dominant cultural values of our society), any good predictive aptitude test will be also culturally biased" (Gallagher, 1975, p. 371). One of the major characteristics of various cultures in our society is either their total lack of use of the English language in their homes or the use of a nonstandard English. "The effects of native language or dialect on the test performance of non-dominant ethnic populations has not been studied sufficiently" (Bernal, 1976, p. 69). Therefore, to test their verbal and logical abilities in a standard English setting with culturally biased questions will not tap the talents or abilities of culturally different children. The IQ test appears to be another example of an instrument measuring the child's ability and/or willingness to assimilate the dominant culture rather than his or her academic aptitude.

While many educators are aware of the problems of using IQ scores, their solution of turning to teacher recommendations must also be handled with caution. Creatively gifted children from different backgrounds can sometimes

appear to middle class teachers and counselors as hopelessly crude and unsophisticated, quiet, strongly emotional, critical of others, stubborn, perhaps even negativistic, unwilling to accept things to the teacher or counselor's say so, timid and perhaps even fearful These characteristics make it difficult for teachers and counselors to offer helping relationships and to reward socially desirable kinds of achievement when they appear. Yet these same characteristics are found among some of the most highly effective, productive, and creative people who have made truly outstanding contributions to our society. (Gowan, 1977, p. 238)

The result once again is that the most acculturated among the culturally different students are selected for gifted programs.

A second problem occurs when teachers not adequately informed of cultural differences are involved in identification. "There is reason to believe that culturally different societies reinforce different intellectual abilities selectively. Because of this, the typical culturally different gifted students may have a divergent profile of abilities, thereby raising the risks of having the best minds from these groups go undetected, even at the secondary level" (Bernal, 1976, p. 68). This argument reinforces the need to understand the values of the various cultures from which the students have evolved and provides the rationale for looking to the community for assistance.

Programs relying heavily on community input have found interviews with leaders from appropriate cultural backgrounds highly successful in achieving this purpose. Although they are time consuming and require more work, these activities have been worthwhile for several reasons.

First, they provide an indication of the talents valued by the nondominant culture. Second, in a small but significant way, they open communications between school and community, a rich avenue of resources and possibilities rarely tapped.

While only a few of the difficulties of identification have been highlighted here, some important issues have been raised to which the next few articles respond. In the first article, Adler discusses "Reported Incidence of Giftedness Among Ethnic Groups" and suggests some reasons for the disproportionate numbers of recognized giftedness representing the various cultures. This article is of particular interest because (a) it is one of the first of its kind (1967) to consolidate many of the studies in the past, and (b) it deals with cultures from which a proportionately larger number of gifted persons are identified as well as underidentified cultures. The second entry is a summary of the 1974 Work Conference on the Culturally Different Gifted Child. The challenges dealt with by the participants are discussed and their findings and suggestions on directions for the future are presented.

From the practical research perspective, Grant and Renzulli outline their instrument used in identifying potentially successful college students. The potential impact of this study, "Identifying Achievement Potential in Minority Group Students," on seeking out students ordinarily missed by traditional college entrance procedures has yet to be fully explored. In the final article, "The Culturally Different Gifted Child—The Dawning of His Day?" Sato offers many suggestions and resources in his discussion of identification and planning for the culturally different gifted. His article serves not only as a comprehensive overview of the issues of the culturally different gifted, but also as inspiration for an idea whose time has come.

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Reported Incidence of Giftedness among Ethnic Groups

Abstract: The purpose of this study was to review some of the major studies of giftedness, as well as studies of the intelligence testing of ethnic groups, to ascertain if certain groups appear more frequently than others and, if so, which ones are reported and how consistently they receive mention.

MANY of the studies of giftedness include data pertaining to the nationality and religious background of the group. Some of these studies give these findings in detail, while other studies mention major trends only. There have been others which have disregarded this factor entirely.

In conjunction with the advent and growth of intelligence testing came a number of studies of "national" and "racial" differences in intelligence. Some of these studies were, and for that matter still are, open to criticism.

Included in this paper will be only those studies in which mention of distribution of the national, racial, or religious distribution of the subjects is made. The inclusion of those studies to be reviewed was determined by this principle. Inclusion or noninclusion in no way indicates the relative worth of the studies examined. The fact that data on distribution were included was the deciding factor.

It should be noted that the terms used in the various studies, i.e., religion, national, social, racial, and ethnic, are by no means interchangeable. The writers often do not make clear distinctions regarding these terms. Because of this, their findings are not strictly comparable. Enough similarity does exist though to warrant the drawing of some inferences.

Research in the area of the gifted which contains data pertaining specifically to ethnic differences has been conducted by Terman and Oden (1925, 1947), Witry (1930), Sumption

(1941), Hollingworth (1942), Jenkins (1948, 1950), Barbe (1953, 1964), and Adler (1964). Research in the area of the intelligence testing of various ethnic groups has been conducted by Luckey (1925), Hirsch (1926), Brill (1936), Klineberg (1944), and Garrett (1929, 1951).

Research on the Gifted Containing Data on Ethnic Differences

Terman and Oden (1925, 1947), in their early and monumental study of giftedness, found that 63.9 percent of their gifted group represented five ethnic groups (English, German, Scotch, French, and Jewish) (1925). Among the groups reported least frequently were those of Italian, Portuguese, Mexican, and Negro descent (1947).

Of the five groups comprising 63.9 percent of the total sample, the Jewish were proportionately the highest (1925).

... proportion of Jewish blood, as it is reported, is 10.5 per cent of the total. The amount is probably greater than this, as there is reason to believe that the presence of Jewish blood has in some cases been concealed . . . the amount of Jewish blood in our group is twice the expected (1925, p. 56).

Terman and Oden (1947) write: "There is about a 100 per cent excess of Jewish blood. . . ." (p. 14).

According to the census of 1927, the Jewish population of California was 123,284 out of a total population of 4,433,000. The Jewish pop-

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ulation accounted for about 3.6 percent of the total according to the *American Jewish Yearbook* (Jewish Publication Society, 1929).

Terman and Oden (1947) write:

Among our 1,467 living subjects are 152 . . . whose parents were both of Jewish descent. The proportion is 10.36 per cent. . . . In making this classification [Jewish] we have arbitrarily excluded from the Jewish group all who were reported as having a non-Jewish parent or grandparent (p. 296).

Terman and Oden (1947) also state:

The Jewish element among the 150 most successful men in the gifted group is considerably greater than in the gifted group as a whole (p. 297).

A larger proportion of the Jewish men than of the non-Jewish were in professional occupations, and correspondingly fewer were in the middle and lower occupational levels (p. 308).

As a possible reason for these differences, Terman and Oden (1947) write:

The important point here is that educational tradition was stronger in families of the A group [most successful]. In line with this is the fact that the Jewish element was three times as large among the A's as among the C's [least successful] (p. 350).

Witty (1930) gives a comparatively detailed breakdown of the ethnic composition of his group of 100 gifted children. He writes:

A study of the racial origin revealed a preponderance of English, Scotch, German, and Jewish parents. . . . Small numbers are Dutch, Bohemian, Polish, and Swedish ancestry. Ninety-six per cent of the parents are American born (p. 8).

In a more detailed listing Witty gives the ancestry of the gifted children in his group as well as their representation. English ancestry accounted for 29 percent, Scotch 12 percent, German 16 percent, and Jewish 10 percent of the total number studied.

The ethnic composition of the gifted group studied by Witty closely parallels Terman and Oden's (1925, 1947) as well as that of other groups investigated. Witty's study is one of the earliest systematic investigations of giftedness. Its methodology and findings have been substantiated by later studies.

Sumption (1941) reports that out of the 195

cases where ethnic background was given, 28 reported Jewish nationality background (14.3 percent). The closest census figures available are for 1940. The Jewish population of Cleveland, Ohio, in 1940 was 90,000 out of a total population of 878,336 or about 9.8 percent according to the *American Jewish Yearbook* (Jewish Publication Society, 1945). The writer obtained his data from a variety of sources including questionnaires, personal interviews, and school records.

One of the major sources of information on highly gifted children is Hollingworth's (1942) *Children Above 180 IQ*. Hollingworth gives the following nationality breakdown of her group: Jewish, 13; British, 9; German, 2; French, 2. She notes that the great majority of children are of Jewish background. It should be noted that Hollingworth's sample was selected from the New York City area, an area of heavy Jewish concentration. This may, in some measure, account for the differences found in her study.

In his study of intellectually superior Negro youth, Jenkins (1950) found that "0.3 per cent of the group examined scored at IQ 140 and above and fully 1 per cent scored at IQ 130 and above" (p. 323). He concludes that his findings closely approximate the normal curve of intelligence as typically given. These figures, according to Jenkins, are based upon 22,301 cases drawn from northern urban communities as reported in 13 studies.

Elsewhere, Jenkins (1948) writes that since

psychologists generally attribute the low average performance of Negro groups on intelligence tests to cultural factors . . . we may conclude that race per se . . . is not a limiting factor in psychometric intelligence (p. 399).

Barbe (1953) states that

the racial stock of the subjects in the present study is predominantly German. Nearly half, 47.6 per cent, of the subjects reported having some degree of German ancestry (p. 88).

Barbe lists the following groups: English, 23 percent; Hungarian, 14.7 percent; Russian, 14.4 percent; Polish, 10.2 percent; and Negro, 2.5 percent. He states that "hardly any European country was not at least mentioned" (p. 88).

Barbe (1953) lists, under the section dealing with religious preference, the following totals:

Catholic, 11.3 percent; Protestant, 46.3 percent; Jewish, 38.8 percent; and other, 3.6 percent. Barbe takes note that these figures are limited by the fact that many Catholic children are educated in parochial schools and may thus be missed in a study of public school children. In referring to these differences, he states that the Jewish group is represented in far greater numbers in the Major Work Program than might be expected by knowing their total number in the general population. Barbe (1956) found that approximately 39 percent of his group was Jewish, a figure much higher than would be expected.

In a recent study of gifted children in Ohio, Barbe (1964) found that approximately 60 percent of the group listed religious affiliation as Protestant. Catholic children accounted for 12 percent of the group. Barbe states that this may be due to the fact that many Catholic children are not found in public schools. Jewish subjects accounted for about 8 percent.

Adler (1964) used the child's listed religious preference in analyzing the religious composition of Barbe's Ohio study of gifted children and found the results to differ slightly. His results were: Protestant, 70 percent; Catholic, 13.8 percent; Jewish, 8.5 percent; and no preferences listed, 7.7 percent. The results of this study do not differ to any significant degree from previous studies. Proportionately, the results tend to be even greater in the same direction. In this study the Jewish group is represented in three times the expected level within the total population of approximately 5 million (2.8 percent) according to the US Bureau of Census (1963).

Research on Intelligence Testing of Various Ethnic Groups

A great deal of information was gained from a review of studies concerned with the intelligence testing of various ethnic groups. Though these studies did not concern themselves with the gifted group alone, they did yield valuable data concerning the tested intelligence of various ethnic groups.

In her early study of differences in intelligence, Luckey (1925) found the highest number of her "bright cases" were Jewish (24 percent), and the highest number of her "dull

cases" (65 percent) were Negroes (1925). No other figures are given.

Hirsch (1926) lists the following percentages in different "socio-national" groups to be at or above an IQ score of 120:

Polish Jew, 13 per cent; Swedes, 11 per cent; English, 10 per cent; Russian Jew, 9 per cent; Americans, 8 per cent; Irish, 7.5 per cent; Germans, 7 per cent; Lithuanians, 6 per cent; British Canadians, 5 per cent; Russians, 4.5 per cent; Greeks, 4 per cent; Negroes, 3.5 per cent; French Canadians, 3 per cent; Poles, 2.5 per cent; Portuguese, 2 per cent (p. 233).

These figures are based upon a population of nearly 5000 school children, chronological age range of 5 to 18, all offspring of immigrant European parents. Intelligence test data are based upon an average IQ score derived from three group intelligence tests which were administered to each subject. Hirsch concludes by stating that these differences in intelligence are national rather than racial.

Garrett was one of the earliest and most prolific researchers in the area of comparative studies in ethnic intelligence. To trace his thinking in this area necessitates a study of numerous and varied sources. In an early study, Garrett (1929) compared 296 Columbia College students with Jewish, Italian, and English ancestry on the Thorndike Intelligence Examination, social intelligence, grades, and the Laird Personal Inventory. When viewed according to ancestry, the Jews came out ahead in general intelligence and were higher in college grades. Garrett (1929) states that "Jewish students rank significantly higher than other freshman groups classified as to national origin both in *Grades* and *Thorndike Intelligence Score*" (p. 348). When classified as to religion, he found that "the Hebrew students rank higher than the Catholics and Protestants both in *Grades* and *Thorndike Score*. There were no significant differences between Catholics and Protestants" (p. 348).

Regarding tested differences between Negro and white subjects, Garrett (1951) writes:

To summarize, on tests of mental ability the American Negro ranks on the average consistently lower than the American white. The regularity of this result from babyhood to adulthood makes it appear unlikely that environmental opportunity and social status can explain all of the differences found (p. 286).

Garrett's notions regarding these differences have changed considerably over a period of years. In his article "Negro-White Differences in Mental Ability in the United States" Garrett (1947) wrote that "the point may be stressed again that the differences between American Negroes and American whites are not true racial differences" (p. 333).

In the foreword to Shuey's (1958) book, *The Testing of Negro Intelligence*, Garrett writes:

Dr. Shuey concludes that the regularity and consistency of the results strongly imply a racial basis for these differences. I believe that the weight of evidence supports her conclusion (p. viii).

Garrett's specific thinking regarding Negro-white differences in intelligence is less clear.

Regarding differences between national groups, Garrett is somewhat more consistent. He writes:

On the whole differences among national groups would seem to be more reasonably explained by selection, differences in training, language, educational background, and culture, than by differences in native ability (1951, p. 289).

Brill (1936) reviews some of the major comparative studies of Jewish and non-Jewish intelligence. He analyzed the studies and concluded that Jewish children were intellectually superior or equal to non-Jewish children when socioeconomic class was similar. Brill summarizes by writing that "no study of racial mental differences is conclusive unless this factor [socioeconomic status] is ruled out" (p. 349).

Klineberg (1944) summarizes his review of some of the studies of ethnic differences by stating:

The results show that groups like the English, Scotch, Germans, Jews, Chinese, and Japanese test close to the norm (white American); and American Negroes, Indians, Italians, Portuguese, and Mexicans test definitely below the norm (p. 35).

Discussion

In the preceding section a number of major studies of giftedness, as well as studies of the intelligence testing of ethnic groups, were reviewed. Many of these studies gave considerable data on the ethnic composition of their groups.

Other studies dealt with only two or three ethnic groups. The following summary, then, is based on those differences as given.

1. Thirteen of the studies noted that ethnic differences exist in the area of intellectual assessment. These differences, in nearly all the studies, did not fit a Gaussian or normal distribution curve. Certain groups tended to be represented in far greater numbers than others.
2. Based upon the data given, the following groups tend to be mentioned in greater proportions than others: 12 studies mentioned subjects of Jewish descent; six studies noted the preponderance of subjects of German descent in their group; subjects of English and Scotch extraction were mentioned in four studies; and various other groups were mentioned to a lesser degree in one or two studies.
3. At the other end of the scale, in comparison, such groups are considered as the Negro (five studies), the Italian (two studies), the Portuguese (three studies), the Mexican (two studies), and the American Indian (two studies). One study did note that the Negro group, at the gifted end of the intellectual scale, more nearly approximated the expected norm group.
4. The underlying factors behind these differences are (usually very briefly) mentioned in a few of the studies but rarely in more than a cursory manner. These factors are complex and varied.
5. As one reviews the literature in the area of the gifted and the ethnic distribution of tested intelligence, it becomes increasingly more evident that certain ethnic groups are represented in far greater numbers than would be expected. These differences are similar in both types of studies and remain fairly constant throughout the literature.
6. It is interesting to note that the differences mentioned in the studies remain fairly constant over a considerable period of time, a period of almost 40 years (1925 to 1964).
7. Two groups which seem to be consistently mentioned in the literature are the Jewish and the Negro. The Jewish group seems to be consistently mentioned as being present in the gifted groups in far greater numbers

than would be expected in view of their total number in the population. At the other end of the scale is the Negro group. This group tends to be represented in far lesser numbers than would be expected.

Implications

There has been little evidence that one ethnic or racial group is superior to another with respect to superior intellectual potential. In light of this, the answer to the uneven distribution of giftedness will have to be sought elsewhere. Some of the factors behind these differences may be the nature of our current intelligence tests, language facility, differences in cultural value systems and background, socioeconomic class, physical and psychological environment, schooling, and perhaps others still not identified.

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Foundation for Exceptional Children Addresses the Needs of the Culturally Different Gifted Child

June B. Jordan, CEC Information Center

"Gifted minority children with agile minds cannot soar to great heights like eagles under rigid people." Such was a maxim posed by one of the small groups in a recent Work Conference on the Culturally Different Gifted Child.

Sponsored by the Robert Sterling Clark Foundation and the Foundation for Exceptional Children, the conference was held near Rougemont, North Carolina, September 13-14. Dr. James J. Gallagher, President of the Association for the Gifted (TAG) and Director of the Frank Porter Graham Child Development Center at the University of North Carolina served as chairperson. The challenge to the conference was fivefold:

- Clarify major issues and needs of the culturally different gifted child.
- Identify major issues and needs they have.
- Identify barriers to effective educational and social action that currently exist.
- Identify strategies to overcome the barriers.
- Identify specific program action steps to be taken.

About 40 people attended, including the core participants listed at the end of this article and observers from various organizations and agencies. This writer was fortunate to be included as an observer from The Council for Exceptional Children. The purpose of this issue of *Continuing Dialogue* is to share with the readers of *Exceptional Children* some of the ideas, issues, and concerns expressed during the conference and then to give a preview of more definitive information to come.

What Are the Barriers?

The first task at hand was to identify the barriers which impede the educational oppor-

tunities for culturally different gifted children. Working in small task forces, the participants defined the following general topic areas where such barriers exist:

1. Identification and Definition.

There is a failure to identify young culturally different gifted children early. If you leave them until they are 9 or 10, you might have dropouts instead of children who are really ready to start to work with their special ability.... There haven't been conscientious efforts to identify these children early.

A barrier is identification which is limited to conventional methods... for instance, ability to read music versus ability to hear and reproduce. A school of art and music requires children to pass certain tests before they can develop their musical ability. There are some kids who play because they have a feeling and they know it's there but if they can't pass a musical reading test, they might be eliminated. This is one particular barrier we know exists, not only in music but in our regular fundamental cognitive skills.

2. Cultural Pluralism.

I feel, as a Navajo Indian, you can't understand me unless you know my language and my culture, as I know your language and your culture. That's why we get into a relationship where there's no real understanding from people who speak English. It makes me very sad to say that, but I feel like it has to be said. If people are going to continue to work with other ethnic groups, there has to be an effort made by these people to learn the language.

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"The real mission of the whole bit happens to be the children that are involved, and it seems to me that that's the vehicle whereby we begin to break down some of the rigidity and develop a kind of mutual trust which just doesn't exist in educational programs."

... [It is important] particularly for black children, for all minorities, that they should be able to also operate and compete in the dominant society but at the same time not lose their own identity.... Those who will be working directly with those children should have in-depth understanding of the culture and try to help that child understand the culture.

3. Personnel.

This was a very all inclusive one... the inability of the teachers to understand the various facets of the intellect that can be tapped in training... understanding that that child might be gifted in more than one area.... This lack of training would build a barrier to selection or understanding that that child was particularly gifted.

4. System Rigidity.

... most crucial is lack of commitment, not just toward the gifted, but more so toward the gifted minority. The problem is how do you overcome this lack of commitment... on the part of the educational system and government. I think we pay a lip service to the gifted but that's where it ends.

5. Accountability.

... we lack a national policy in regard to the gifted. This could include such things as accountability or no accountability. It could look at programs in isolation. We might have one program here that is doing an excellent job, but in terms of the application or replication in other areas without some type of national policy... once the teacher or the person who is promoting that program leaves, so does the program.

6. Finding Resources.

... a barrier is that of financing. That's a general rubric—and under that we have finance (a) for institutions and (b) for individuals.

We have no real needs assessment relative to resources at all levels. Before we say we're not making use of resources, it is important to find out what we have or what we don't have.

7. Attitudes and Values.

... [there is] a failure to admit presence of giftedness in minority groups. Some people just don't feel that there are any gifted children. So why worry about them? There aren't any... therefore that's one of the prime barriers.

And next, people might feel that they don't want this type of program because the first thing you shouldn't do is make the children feel different. You shouldn't name them disadvantaged or culturally different. You shouldn't say they are gifted. You shouldn't say they are handicapped. There shouldn't be any type of label.

I've been through the whole bit with a resistant board of education which is a community that becomes very much uptight by anything that might be labeling, so you've even got to work on how you handle a number of different publics, including that teacher public which is a very difficult one.

What Are the Strategies for Solution?

After identifying the problems and barriers to effective educational programming for the culturally different gifted child, the work confer-

"I'm hopeful that what comes out of this conference will give some better ammunition to go out and say that there are just as many gifted in the ghettos and barrios and the Indian reservations as there are in the suburbs."

ence participants were charged with charting paths to overcome the perceived obstacles. In small work sessions and in total group exchange, alternative strategies to deal with system rigidity, finances, identification of the gifted, etc., were delineated. Only a sample of their proposed implementation strategies can be included here:

- Define what you want the system to do (mission for minority gifted children). Then, develop an additional plan for specific target groups such as legislators, school boards, educators, and parents.
- Develop national, regional, state, and local conferences based on needs that have been identified.
- Establish criteria for giftedness to include in school and out of school behavior characteristics determined by more than the teacher; include parents, community leaders, and professionals from the specific group being identified.
- Establish a system of evaluation in the training program so that only those individuals with certain attitudes would be included in the program. Teachers of the gifted should possess the ability to work with minority gifted children and also should possess a predisposition for working with these children.
- Use community talent in the public schools to break through system rigidity. Most communities are rich in environmental resources that can be utilized in working with the minority gifted child.
- Identify and develop model programs that effectively serve minority gifted children. In the establishment of such models, consideration should be given to developing those models as an integral part of the regular school program, thereby giving regular edu-

cation an ownership to the program and not allowing the program to develop in isolation.

- Develop a course of study of programs for minority gifted children which guarantees that basic skill development will occur. Programs should also include certain universals with cultural specific elements incorporated as appropriate.

Where Do We Go from Here?

According to Chairperson Gallagher the work has just begun and these initial efforts by the work conference will be prepared for publication and distribution.

We can exchange ideas on our own programs and activities and get a better feeling for what everyone else is doing. What we can't do is some definitive study on certain issues, nor can we come to final resolution in terms of action. What we are going to do is to take the recommendations and positions presented here, organize them into a brief report and get it into the hands of key legislative people and other people who are generally interested in programs for the gifted and the culturally different subsections.

In addition, a larger, more comprehensive publication will be issued. It will be based primarily on the position papers prepared for the conference as well as a summary and analysis of the presentations and discussions that took place during the meeting.

Publication is expected within a few months. To receive information about availability of the conference products write to:

The ERIC Clearinghouse on the
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The Council for Exceptional Children
1920 Association Drive
Reston, Virginia 22091

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Work Conference on the Culturally Different Gifted Child**
Held in Rougemont, North Carolina, September 12-14, 1973

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Identifying Achievement Potential in Minority Group Students

THOMAS E. GRANT
JOSEPH S. RENZULLI

Abstract: An inventory was developed to identify potentially successful college students who are from minority cultures and therefore might be missed by traditional screening procedures. An initial pool of 145 items was developed and field tested. The final instrument, entitled Relevant Aspects of Potential, consists of 30 items and is intended to supplement other methods for evaluating student performance.

The national effort to provide minority groups with equal opportunities in higher education is often hampered by an inability to identify potentially successful college students through traditional prediction and admission procedures. Many innovative college programs which have been established since the early 1960's have developed their own systems for identifying talent potential among students from low socioeconomic backgrounds. The common concern of such efforts has been to identify students who show a high probability of profiting from continued education and from the special as-

sistance frequently provided during transition periods from high school to college.

Although college and university admissions personnel have increased the use of interviews for assessing the success potential of minority youth, there may be another means to identify high potential students more economically and accurately. This possibility is a questionnaire procedure which does not require the presence of an interviewer. Up to now, there have been few economic alternatives for the customary procedures of standardized testing or sending special college personnel to urban high schools to identify talented students by the essentially uncontrolled techniques of referral and interviewing. The typical identification and selection effort is often expensive, time consuming, and ineffective in terms of reaching and carefully examining large numbers of potentially gifted young people.

Related Research

A number of researchers have investigated various indicators of talent potential in culturally different groups. Torrance (1968, 1969) has determined that certain creative characteristics occur to a high degree among disadvantaged groups and that these may discriminate between children with a great deal of intellectual potential and those with less ability. Frierson (1965) used an interest inventory to isolate certain characteristics that distinguish gifted disadvantaged youngsters from average students of low status backgrounds, and Riessman (1964) has isolated a list of the positive dimensions of the culture and style of educationally deprived people. Bruch (1969) has pointed out that the identification of disadvantaged gifted students should include personal, cultural, and family information which might affect the

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From *Exceptional Children* January 1975, pp. 255-259. Copyright © 1975 The Council for Exceptional Children.

student's further development of his gifts. Ebel (1966) has listed some guidelines that should be used when attempting to develop reasonable alternatives to traditional identification procedures.

A comprehensive review of these and other studies dealing with the characteristics of gifted and culturally different gifted groups (Renzulli, Hartman, & Callahan, 1971; Renzulli, 1973) was used to capitalize upon previous successes and failures related to the problem area. A wide variety of indicators of future performance was explored, including previous experiences, attitudes, interests, value preferences, and sources of derived satisfaction and dissatisfaction.

Construction of a Research Instrument

Content Validity

Following the compilation of data related to indicators of future performance, an inventory was constructed. The intention was to maximize the discriminating and predictive capacity of the instrument for identifying students with exceptional potential for success at higher levels of education. The primary assumptions upon which the inventory is based are:

1. That an instrument must contain task and item content appropriate for the group being evaluated.
2. That students representing a culturally distinct minority must be compared to their own age and cultural peers.
3. That all young people have some potential but that some have high potential for successful social adjustment and personal achievement at institutions of higher learning.
4. That the most talented and gifted contributors of one culture will be those who can most satisfactorily adjust to a new cultural milieu when some supportive assistance is available to overcome obstacles that would unfairly eliminate any candidate's participation.
5. That social, creative, and intellectual giftedness must in themselves be measured for a suitable assessment of potential.
6. That self concept and motivation must also be measured directly or indirectly by the test.

7. That both the individual's attitudes toward higher education and the support and encouragement he has received for continued schooling from family, peers, and school personnel must be reevaluated in the light of his measured potential.

Originally, 113 items were written from the many basic elements comprising the pool of empirically and logically related indices of an individual's future achievement. Thirty-five additional items dealt with the amount of support for educationally related aspirations that a student received from family, school personnel, and peers. The original research edition of the instrument, therefore, consisted of 145 items of the following type:

A. Davis has organized a successful campaign which has insured the integration of the history of minority groups into the curricula of his high school. Bill would never organize such a movement but would support the campaign. Byron sees no reason why people should bother about changing what is taught in school.

_____ I am more like Davis than like either Bill or Byron.

B. Raymond, one of the dudes of the group, was busted by the police. Charles went right down to the police station to help Raymond. Davis volunteered to go go along and support Charles. Daniel felt there was nothing he could do to help Raymond. He did not go.

_____ I am more like Charles than like either Davis or Daniel.

C. Rodell is not at ease unless she has written a paper with the opinions of many experts and scholars quoted. Bertha likes to state her own beliefs and elaborate on her own feelings rather than to take Rodell's approach.

_____ I am more like Bertha than like Rodell.

D. Bill Johnson reads a great deal about things that interest him and finds satisfaction in thinking and rapping about what he has read with others.

_____ I am often like Bill.

E. Rhoda is quick to sense problems about the way things are and is concerned and puzzled at why they need to be this way.

_____ I am often like Rhoda.

F. Luddy often makes creative things in her free time. Vivian often reads about

things that interest her during her spare time. Sheila usually talks with her friends during her free time.

_____ I am more like Luddy or Vivian than like Sheila.

Students were asked to respond according to the following scale: 1, strongly disagree; 2, disagree; 3, undecided; 4, agree; and 5, strongly agree.

Construct Validation

Construct validation of the research edition was investigated through three procedures: item analysis, factor analysis, and the known-groups method for determining validity. Each of these procedures as they relate to the development of a revised and validated instrument will be discussed below.

The technique was researched with cooperation and data obtained from the Hartford (Connecticut) Public Schools. The instrument was administered to seniors at an inner city high school that serves a predominantly black and Puerto Rican population.

Experimental and Control Group Subjects

Four weeks before graduation, 258 seniors were administered the instrument. They were also evaluated by four senior class counselors who had regular contact with the students for at least one academic year. The counselors were asked to identify from the total group of students those seniors who had extremely low or unrecognizable potential for continued schooling beyond high school. For research purposes this group of students with low potential was designated as the control group. Ratings that were arrived upon independently by the counselors led to the identification of 30 control group students.

From among the remaining students in the senior class to whom the instrument was administered, a random sample of 30 students possessing moderate to high potential was selected to serve as the experimental group. This procedure for selecting the experimental group was used to insure the existence of a broad range of ability and latent potential in the sample. The objective was to avoid selecting a homogeneous group of the 30 most outstanding students who could be easily and readily identified at any time by several existing traditional tests.

Counselor judgment was the only criterion available in this instance, and great care

was taken to minimize error by adhering to several appropriate procedures. In addition to the previously mentioned procedure for selection of the sample through independent unanimous ratings, the counselors were also given a list which included several characteristics not traditionally recognized but which were identified as characteristics of high potential (see Renzulli, 1973). Students who were eventually chosen for the control (low potential) group did not possess any of these special talents and abilities to a recognizable degree. The rating sheet which was constructed for counselors emphasized a wide variety of areas in which students might display indications of talent potential. When counselors were undecided about any given student's potential, this person was automatically disqualified from the control group.

All students were administered the inventory under the same environmental conditions. They were randomly seated, and no student was aware of the fact that he would later be classified by the counselors according to estimated potential.

A second experimental sample consisted of 30 precollege freshmen attending the UConn Summer Program at the University of Connecticut. The UConn sample was comprised of exceptional individuals from minority groups who were enrolled in the supportive precollege educational program. Individual interviews and data sheets summarizing information about each student's background and interests were used in the selection of these students for the summer program. These same students with recognized high potential would have normally been rejected for college entrance at the University of Connecticut on the basis of their College Entrance Examination Board scores and grade point averages.

Since the high school seniors completed the inventory in June and the precollege freshmen completed the inventory in July of the same year, the precollege students were only 6 weeks older in chronological age than students in the high school experimental and control groups. The UConn Summer Program participants were included in the study for purposes of forming a second experimental group that was comprised of students who had been previously identified for higher education by high school counselors and col-

lege personnel on the basis of their high potential for successful adjustment to the demands of college. These students were further screened for the experimental group by having summer program counselors select the 30 students in the program who seemed to show greatest promise among the 100 students enrolled.

Item Analysis

Procedures of item analysis were used to eliminate items on the research instrument which failed to show any relationship with

counselors' estimates of potential on the high school and precollege samples. Items which were ultimately retained as part of the final instrument were those which showed a significantly positive biserial correlation with the total scores of at least one of the experimental groups. In other words, internal consistency was established by comparing each individual item with the composite score of the group.

Items were rejected for one or more of the following reasons: extremely skewed distributions over the possible response categories,

TABLE 1
Means, Standard Deviations, and Levels of Significance
for Individual Item Comparisons Between
Experimental and Control Groups

Item	Experimental groups				Control group		Comparisons between groups	
	High school (N = 31)		Summer program (N = 31)		(N = 32)		High school vs control group	Summer program vs control group
	Mean	SD	Mean	SD	Mean	SD	t	t
3	2.96	1.27	3.32	1.10	2.71	1.17	0.80	2.10*
6	3.19	1.22	3.51	0.85	2.96	1.35	0.69	1.91*
10	2.93	1.20	2.80	1.16	2.21	1.31	2.25*	1.87*
12	2.83	1.09	3.70	0.82	3.09	1.35	0.82	2.17*
14	2.93	1.09	3.16	1.81	2.56	1.21	1.27	1.97*
15	3.96	0.75	3.83	0.96	3.50	1.04	2.03*	1.33
16	3.58	1.25	3.96	0.87	3.43	1.10	0.47	2.10*
18	2.93	0.72	3.45	0.85	3.03	1.09	0.40	1.70*
22	3.38	0.95	3.54	0.92	3.12	0.97	1.07	1.76*
37	3.00	1.21	2.77	1.11	2.28	0.95	2.61**	1.88*
38	3.54	1.12	3.93	1.26	3.40	1.10	0.50	1.77*
40	3.64	0.98	3.00	1.21	3.15	1.29	1.68*	0.49
43	2.80	1.44	2.87	1.14	2.25	1.07	1.73*	2.21*
49	3.51	1.36	3.25	1.21	2.93	1.13	1.83*	1.08
54	3.19	1.10	3.06	0.96	2.78	0.83	1.67*	1.24
58	4.29	0.64	4.00	1.09	3.90	1.05	1.73*	0.34
60	2.67	1.22	2.67	1.07	2.15	0.84	1.97*	2.13*
67	3.80	0.90	3.77	0.95	3.28	1.14	2.01*	1.85*
71	3.96	1.04	3.64	1.14	3.37	1.03	2.25*	0.98
75	3.87	0.76	3.58	0.99	3.50	0.87	1.79*	0.34
80	4.09	0.87	3.87	0.76	3.59	0.97	2.15*	1.25
97	4.16	0.73	3.51	1.12	3.34	1.15	3.34**	0.60
110	3.09	1.10	3.25	1.06	2.78	1.21	1.07	1.67*
128	3.03	1.35	3.29	1.16	2.59	1.29	1.31	2.24*
129	4.38	0.98	4.32	0.94	3.78	1.23	2.14*	1.94*
135	4.54	0.85	4.32	0.74	3.84	1.16	2.73**	1.93*
138	3.64	1.35	4.00	0.89	3.34	1.12	0.96	2.55*
139	3.90	1.30	3.74	1.15	3.15	1.29	2.28*	1.89*
142	3.83	1.21	4.00	1.00	3.28	1.22	1.81*	2.54**
144	4.41	0.84	3.86	1.04	3.34	1.33	3.80***	1.71*

* $p < .05$

** $p < .01$

*** $p < .001$

an extremely large number of individuals indicating "neither agree nor disagree," extremely distorted means and standard deviations, extremely small or negative correlations with counselors' estimates of potential, or negative correlation with the composite scores of the instrument.

Factor Analysis

Principal component analysis was the factor analytic technique employed in the second phase of the research. Items were deleted from the instrument if they were generally unrelated to any of the major dimensions generated by the factor analysis program.

Comparative Analysis Between Known Groups

A third method for examining the construct validity of the experimental instrument consisted of determining whether or not the item scores of the experimental groups differed significantly from the scores of the control group. Means and standard deviations were computed for each item, and *t* test comparisons were made between the groups. Only items which discriminated significantly between the control group and at least one of the experimental groups were retained in the final version of the instrument. Data relating to these items are presented in Table 1.

Results and Discussion

As can be seen from Table 1, 30 of the 145 original items significantly discriminated between the control group and at least one of the experimental groups. Although this number of discriminating items was far less than anticipated, several items may have failed to identify high potential students because of reluctance on the part of respondents to commit themselves to a definitive response in particular situations. Students generally responded to certain items which they found offensive to a sense of trust and confidence by checking "neither agree nor disagree." This assisted the researchers in the process of identification and deletion of items which were objectionable to the student in respect to content.

In a similar fashion, most respondents either agreed or disagreed with the content

of certain poorly written items and this helped to identify their degree of usefulness as predictor variables. Items which were interpreted to have an extremely small correlation with the estimates of potential of the experimental groups were also deleted due to the strong probability that these items would not function to identify the high potential student on subsequent samples.

In its final form, the selection process consists only of items which help identify students with high success potential. This instrument, entitled Relevant Aspects of Potential (RAP), can be used to assist the educator in identifying the hidden aptitudes and interests of students from low socioeconomic and minority group backgrounds. It is intended to supplement, rather than supplant, other useful methods of examining high school performance. (Persons interested in obtaining copies of RAP should write to the senior author.)

Current supportive educational programs for students offer an opportunity to discover many previously unrecognized talented and gifted students. The instrument described herein is offered as a means of assisting in this discovery process, and at the same time, we hope that it will generate additional research in the area of identifying talent potential in low socioeconomic and minority groups.

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The Culturally Different Gifted Child--The Dawning of His Day?

IRVING S. SATO

Abstract: This article offers a definition of the term culturally different gifted child. It reexamines the identification procedure and calls for more research with an emphasis on environmental and sociological variables. The need for qualitatively differentiated program provisions is discussed. The article also points out what is being done to fulfill the special and different needs of the culturally different gifted child and offers information on the educational programs being instituted throughout the US. Some available resources which have generated new materials are provided.

In 1958 McClelland in *Talent and Society* underscored an educational opportunity and challenge:

As students from impoverished backgrounds and from racial and ethnic minorities have "achieved" when provided with appropriate educational opportunities, they have demonstrated that "the right kinds of education" can indeed transform potential into "actual talented performance."

This statement summarizes numerous research studies on the education of the culturally different gifted child. Research by Witty and Jenkins (1934) and Jenkins (1948) has shown that high IQ Black pupils with varying backgrounds have reached achievement levels comparable with other gifted students and that race in itself is not a limiting factor in the development of the intellect. Similar findings have been

reported by Niles (1954) and others. More recently, works of individuals such as Frierson (1965) and Karnes (1965) have supported research findings on the impact of socioeconomic class differences. Frierson has reported that the major difference between gifted pupils from middle and lower classes lies in interests and attitudes, not physical ability or personality. Educators have continually been reminded by researchers such as Bloom (1964), Bernal (1972), and Stallings (1972) that environment does play a crucial part in intellectual development and counts as a major factor in varying achievement levels between different cultural and ethnic groups.

In 1972 the US Commissioner of Education in *Education of the Gifted and Talented, Report to the Congress of the United States*, dramatically pointed out that of the 2 to 2½ million gifted and talented pupils in the United States, only 4 percent are being served adequately in schools. Culturally different children, as well as most other gifted and talented pupils, are not currently receiving educational opportunities commensurate with their abilities. These children, then, face a double bind in education by being culturally different and by being gifted. To improve the present situation, some definite steps are essential: (a) a clearer definition of the term *culturally different gifted child*, (b) a reexamination of identification procedures, (c) qualitatively differentiated program provisions, and (d) availability of resources (both human and otherwise).

The Definition

Beset with varying labels (many of them misnomers) such as *culturally disadvantaged*, *socially disadvantaged*, *culturally diverse*, and *culturally deprived*, the culturally different gifted child has been the victim of a communications battle. In all fairness, the term *cultural-*

From *Exceptional Children*, May 1974, pp. 572-576. Copyright © 1974 The Council for Exceptional Children.

ly *different gifted child* should be defined in two parts.

The *culturally different* comprise one segment of a larger subpopulation called the educationally disadvantaged. This latter, broader group includes not only the culturally different but also the economically deprived, female, handicapped, rural, and underachieving. Thus, the major qualification in the definition of the culturally different is membership in a culture other than the dominant culture in society.

A synthesis of the works of T. Ernest Newland with the University of Illinois and J. Ned Bryan of the US Office of Education provides a broad definition of the gifted or talented: those individuals who excel consistently or show the potential of excelling consistently in any human endeavor—academic, creative, kinesthetic (performance skills), or psychosocial (relational and leadership skills). This broader definition of the gifted presents an alternative to the stereotype of the Terman-type, identified-solely-by-IQ-test gifted child and recognizes the potential for outstanding achievement and performance in any area.

Identification Procedures

Specific, multiple criteria must be the basis for the identification of the culturally different gifted pupil. Needed is a multifaceted, developmental case study which includes all available evidence on the potential and the performance of a child. This need for the case study is underscored by the complex factors which must be considered to begin to understand the culturally different gifted. For instance, as Anita Pfeiffer, a Navajo faculty member of the University of New Mexico, expressed (at the Working Conference on the Culturally Different Gifted Child in North Carolina in September 1973), the Navajo is sometimes under great pressure to accept some element(s) in the dominant culture which require him to give up a part of his native culture which is important to him.

... In accepting both cultures (Navajo and "Anglo" cultures), there is a tremendous sacrifice on the part of the Navajo student to lose what is precious and dear to him as an individual. The individual loses much of his culture. In order to remain Navajo, one should not learn English and attend the present school system. The moment one enters school and begins to learn English, one begins the annihilation of one's culture. When educa-

tors ask us to accept both, we are being asked to uproot ourselves from our own culture; the process of accepting both cultures is a traumatic experience for those of us who have gone through it. The pressure to choose is overwhelmingly geared towards the "Anglo" ways.... It seems to me that teachers need to examine their own values and attitudes first before they can begin to understand us—the culturally different.

Professionals involved in the identification process should understand environmental and sociological differences which are an integral part of various cultures. They should know how these differences influence the behavior and performance of the culturally different gifted in the school as well as in the community. In addition, these educators must be thoroughly familiar with the learning process and accompanying learning theories of researchers such as Piaget, Guilford, Bloom, Phenix, and others. Without this background, educators will be unable to comprehend or appreciate the essence of giftedness.

Individuals currently developing and/or refining possible means of identifying culturally different gifted pupils include Bernal (1972), Bruch (1972), Renzulli & Hartman (1971), Meeker (1969), Stallings (1972), and Torrance (1971). Bernal has been conducting a research project on identifying the gifted among Chicano children in Texas. Bruch has selected items in the Stanford-Binet and "biased" the test toward disadvantaged Black children in her Abbreviated Binet for Disadvantaged. She is now in the process of validating this instrument. Bruch has also developed the Creative Binet, an abbreviated Binet to measure creative potential.

Renzulli and Hartman (1971) designed the Sub-Cultural Indices of Academic Potential (SCIAP), which asks pupils how they feel about themselves and how they would react to everyday situations. By taking into consideration such factors as test bias and cultural differences, the use of an instrument results in a profile of student preferences and learning styles. For several years, Meeker has been working with the Guilford's Structure of the Intellect by isolating and testing for specific areas or types of "giftedness." Stallings has concentrated his efforts on the development of instruments placing major emphasis on items endemic to the child's environment. The *Torrance Tests of Cre-*

ative *Thinking* measure verbally and nonverbally a child's fluency, flexibility, originality, and elaboration.

Fitzgerald (1974), Gallagher (1974), Martinson (1973), and Renzulli (1971) have prepared recent summaries of various efforts to develop better measures of human potential. These authors and others have described numerous means currently being used to identify culturally different gifted pupils.

1. Psychometric instruments: *Wechsler Intelligence Scale for Children* (Performance Scale); *Leiter International Performance Scales*; *Ammons' Full Scale Picture Vocabulary Test*; *Goodenough Draw-A-Man Test*; *Peabody Picture Vocabulary Test*; *Raven Progressive Matrices*; *Rohwer's Paired Associate Learning-Proficiency Test* (developed at the University of California at Berkeley); scales and tests of creativity developed by individuals such as Guilford, Metfessel, Taylor, and Torrance; nonverbal parts of IQ tests (both group and individual); parts of other existing performance tests; and locally constructed tests.
2. Other sources of criteria: *Alpha Biographical Inventory* (developed by the Institute for Behavioral Research in Creativity); *Pupil Nomination Form-Social Data* (developed by the Lincoln School of Kentucky); planned student interviews conducted by specially trained personnel; planned parent interviews; various checklists (for student, teacher, counselor, and parent use) developed through past and existing research projects and by educators in local settings; evaluation of work samples by a panel of "experts"; and reactions to various perceptual and sensory stimuli, i.e., responses to pictures and/or incidents with qualitative variety, likes and/or dislikes of the complexity of designs.

Qualitatively Differentiated Program Provisions

The identification of culturally different gifted pupils must be followed by planned, qualitatively differentiated program provisions. As in other areas of special education, the bases for curricular modifications and program adjustments should be those unique characteristics (motivational and otherwise) which differentiate this population from other learners. For instance, Riessman (1962) pointed out that because the culturally different gifted often are

more problem centered than abstract centered, they should be involved in *specific* classroom situations which only gradually result in inductive thinking. Concrete and psychomotor responses are frequently elicited by using simulation and other academic games and role playing.

Educational programs for the culturally different gifted are being instituted in various parts of the country. Through Project CLUE (Cooperative Leadership for Urban Education), Tennessee's four major school systems—Chattanooga, Knoxville, Memphis, and Nashville—are involving urban students in learning strategies which seek to change student apathy into positive action and channel student activism into responsible accomplishment. This project draws 600 talented fourth, fifth, and sixth graders from 51 schools for two half-day sessions per week at a CLUE center. In the setting of a creativity workshop at The University of Georgia, during each summer since 1967, Torrance and his graduate students (many of them teachers in public schools) have strived to identify and develop creative talent among the disadvantaged. With approximately 80 to 100 children ranging from 6 to 12 years old, these workshops have been conducted in a disadvantaged Black neighborhood in Clarke County, Georgia.

From 1969 to 1973, Los Angeles City Unified School District conducted developmental pilot programs for the educationally disadvantaged in grades 4 to 6 and 7 to 9. These programs, initiated at 11 schools, were based upon the situational testing model, which couples identification procedures with the classes' ongoing programs of enrichment. Before the initiation of the program, members of the faculty learned about the characteristics of disadvantaged gifted children and discussed the possibilities for program implementation. Student participants were initially nominated by teachers and later screened by a local school committee which worked with a counseling staff to review all available data. Primary program objectives were "to give a wide exposure in advanced learning skills and to offer curricula which would stimulate these pupils to display gifted potentials." Taking into account the students' environmental and school backgrounds, informality was the key in the classroom. Groups reorganized frequently and flexibly. Lessons were free from anxiety with few time pressures, grades, and "right" answers.

Other program efforts affecting the culturally different gifted child include the Nueva Day School, a private school in Hillsborough, California, for high potential, disadvantaged youth which develops and disseminates research results and instructional materials; Project Access, conducted in New York City, Washington, D.C., Atlanta, Chicago, Dallas, Detroit, and Los Angeles to reduce the information gap on the students in ghetto areas; and Project Potential, conducted by N. Metfessel of the University of Southern California to identify variables which contribute to achievement among Mexican American students. In addition, there are several other schools, such as those in Philadelphia, Pennsylvania; Worcester and Springfield, Massachusetts; and Hartford, Connecticut, which concentrate their efforts on identifying and developing these pupils.

Passow (1972) has recently discussed some action steps necessary for effecting qualitatively differentiated programs for the culturally different gifted:

1. Offer opportunities for these students to teach their fellow students.
2. Encourage varied activities for talent development in nonconventional settings involving nontraditional personnel.
3. Plan and conduct staff inservice training which is necessary to alter expectations related to identifying and nurturing talent among the culturally different, using new and appropriate teaching strategies, and using learning resources in the school and the community more effectively.
4. If involved in work with inner city schools, take advantage of rich resources for learning in many urban centers.
5. Search for better strategies to recognize bilingual needs and the potential richness of cultural differences.
6. Develop appropriate guidance and other ancillary services and help these pupils with affective matters such as peer and family attitudes toward the gifted child's "being different" and the recognition of options.
7. Secure opportunities for these pupils to serve in various community agencies.
8. Assist in the development of financial resources if needed; expand opportunities for the gifted student to serve and to work as a means of earning some income.

However valid or appropriate these programs for the culturally different gifted students, the key to the success of any educational programs for children is the *teacher*. Teacher preparation programs which train teachers of culturally different gifted pupils, such as those in operation at the University of Connecticut with Renzulli, The University of Georgia with Torrance and Bruch, and The University of South Florida with Sisk are being and should be instituted. Educational agencies are recognizing more the importance of inservice education in supplementing preservice training.

Available Resources

Through the cooperative efforts of existing groups and agencies (e.g., Office of the Gifted and Talented, regional offices of education, state educational agencies, The Association for the Gifted, and the National Association for Gifted Children), we have seen productive efforts on behalf of the culturally different gifted. In August 1973, The Council for Exceptional Children sponsored a one week Institute/Conference on Cultural Diversity. It was followed in September by The Foundation for Exceptional Children's Working Conference on the Culturally Different Gifted Child. Reports from both conferences will be published shortly. At present, the National Clearinghouse for the Gifted and Talented provides access to valuable information through ERIC searches and other means. In the future, it plans to augment its dissemination of practical information with such items as synthesis papers and resource lists.

The National/State Leadership Training Institute on the Gifted and the Talented (N/S-LTI-G/T) has encouraged states to include provisions for the culturally different gifted in their state plans. In March 1973, it sponsored the first National Conference on the Disadvantaged Gifted with the emphasis being placed on four types of disadvantages—culturally different, economically deprived, female, and rural. A publication related to this conference will be out shortly. During the 1972-73 school year, the N/S-LTI-G/T, in cooperation with the State of Illinois Office of the Superintendent of Public Instruction, produced several one minute TV commercials on the disadvantaged gifted as well as the 25 minute film, *More Than a Glance*. This film examines factors contributing to the development of a Black girl's special talents. By Spring 1974, the N/S-LTI-G/T will have avail-

able for purchase two publications with sections related to the culturally different gifted child—*The Identification of the Gifted and Talented and Providing Programs for the Gifted and Talented: A Handbook*.

None of these activities in isolation can affect the status quo. But society has been jarred somewhat from its lethargy; it seems more cognizant of special and different educational needs. What remains now is for the separate "pro" elements to coordinate their efforts. With clear, long range goals, the united and unified efforts of the committed can bring about educational opportunities which are commensurate with the abilities and potential of the culturally different gifted child.

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IV. Curriculum Ideas for Gifted Education

Introduction

The call for defensible programs for the gifted through differentiated instruction (Renzulli, 1977) has resulted in an onslaught of curriculum materials in every content area imaginable. From units on "death and the gifted" to astrophotography, the list is endless. With all these new packets, kits, and media extravaganzas on the market, persons responsible for selecting the materials to be used in a gifted program face some critical issues.

One such issue is the question of "generated" versus "prescribed" curricula. A second concern is the problem of making selections from the deluge of new materials. Lastly, the degree to which one relies on and adheres to the commercial packages must be determined. Each of these issues deserves further discussion.

One risk in purchasing curriculum materials is that these packages, with their predetermined objectives and activities, become the "last word." Keeping in mind Dewey's description of each child as a unique person who comes to school having had a unique set of experiences and therefore having a unique set of educational needs, it is difficult to rationalize exposing each child to the same educational program as if these activities were precisely what all children needed and desired. While these materials are often the result of thorough research and contain some innovative curriculum ideas that are not always possible or practical for teachers to generate themselves, using them unaltered and unquestioned cannot be defended. This does not imply that these curriculum units have no place in our gifted programs; they can play an important role in providing teachers with additional instructional materials; however, great caution must be exercised in selection and usage.

There should be a specific reason for selecting the materials in the first place; that is, the students should have a specific interest in the particular subject. There are, of course, financial considerations that prohibit buying every curriculum dealing with every interest area of every gifted student, but as certain activities continue to generate enthusiasm each time they are presented, the use of supplementary materials might be appropriate. When instructional units are developed in this way, curriculum is no longer being prescribed in the traditional sense. Instead, student interests are generating the curriculum.

Once the subject area has been determined, evaluating available materials before making a purchase becomes the critical issue. While a thorough discussion of curriculum materials evaluation is not appropriate for this introduction, it is essential that a systematic selection process be employed (Miller, 1971). Successful programming for gifted students demands a flexible curriculum in which the materials allow a variety of options. First, the materials should be able to be administered individually (with or without an instructor present), in small groups, or as a large group endeavor. Second, the materials should be flexible enough to be used as a total package or individual pull-out units without gaps or repetition dilemmas. Third, they should provide challenging queries to inspire further investigation, as opposed to answering all questions and discouraging divergent ideas.

Once the unit is selected, a question remains concerning the extent to which these materials should be used and toward what objectives. If the materials meet the selection criteria, they should serve the teacher and students in three important areas. First, they should spark the interest of the students in a new field of study. Second, they should provide information and resources as to where more in-depth research can be pursued. Third, and perhaps most important, the unit should send the student off with more questions for further investigation. Curriculum materials developed to serve as a stepping stone to real world problem solving situations are not in great preponderance, however. Hence, the current deluge of "differentiated" curriculum materials designed for the gifted must be viewed with caution and used with discretion.

In the following articles some unique approaches to "home grown" curriculum ideas for the gifted are presented. Rowe stresses the generated curriculum concept in his creative writing unit.

"There is no particular season or hour of the day for eliciting meaningful responses in creative writing. Nor is there any bag of tricks or specific techniques for this purpose. Instead the teacher must study his students and be sensitive to the mood or climate within the classroom." Rowe's article is highlighted with poignant examples of his students' creative works that resulted from their in-class discussions.

The second entry is Gold's first in a series of "Gifted Briefs," which outlines various activities to use with gifted children. The suggestions are presented in card-like format and cover a variety of content areas. The types of thinking skills employed and ideas for varying the activities are included, making these practical ideas even more useful.

Rogers and Ryan tackle an issue facing many regular classroom teachers whose schools do not have a gifted program: what to do with the youngster who has skills and abilities far beyond those of his peers. They outline an innovative interdisciplinary program requiring "no costly materials or special teachers." "Extending Reading Skills into Today's World" describes an exemplary program for regular classroom teachers attempting to meet the needs of their gifted students.

In the concluding article on curriculum, Maker makes a strong argument for "Developing Multiple Talents in Exceptional Children." Basing her rationale on Taylor's (1963) findings that "as many as 90% of our students may have a chance to be above average in some talent area," Maker suggests activities to promote growth in a variety of talent areas.

Keeping abreast of the multitude of sound practical curriculum ideas—as overwhelming a task as it seems—is an important responsibility of educators today. The ideas described in these articles serve to generate a renewal of enthusiasm for the endless possibilities for excellence in the classroom.

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Creative Writing and the Gifted Child

Ernest Ras Rowe

This article is an outgrowth of the author's experimentation in a self contained classroom of highly talented sixth grade children at the Skylark School in Garden Grove, California, during the 1965-1966 school year. In the Garden Grove Unified School District there were 13 major work classes comprised of children whose Stanford-Binet Intelligence Test scores were in excess of 130. The sixth grade class in this project was a high cluster group, since 12 students scored above 130 on the Stanford-Binet, and the remaining pupils scored from 103 to 130 on the California Test of Mental Maturity. The class membership totaled 31.

The efforts presented here in no way represent an attempt at controlled experimentation, but instead represent a pragmatic approach emphasizing the idea of the teachable moment and the rapport enjoyed by the students and their teacher. The following paragraphs discuss selected techniques which have proven effective in obtaining original efforts from talented students.

Approaches and Motivational Devices

In the judgment of the author there is no particular season or hour of the day for eliciting meaningful responses in creative writing. Nor is there any bag of tricks or specific technique for this purpose. Instead, the teacher must study his students and be sensitive to the mood or climate within the classroom. Also, the teacher who is highly introspective and well versed in literature and the fine arts will have a definite advantage in reaching his students.

Philosophical Questions. One technique which proved highly successful with this group of children was the use of philosophical questions. Typically, the instructor laid a foundation

of preliminary questions; then allied topics were examined. As the discussion reached its peak, the crucial question was posed. The children were then given time to reflect and to ask additional questions before a due date was established for their written responses, which were usually limited to one page. Time limits varied but typically ranged from two to four days. One alert youngster commented on one such occasion, "Encyclopedias don't do us any good with questions like these." Examples and abstracted student remarks follow.

What is beauty? The instructor introduced this topic with these remarks: "If you were on the desert and saw a sunset with its varied colors of red and gold, how would you describe it?" Their response was, "It's beautiful." Other leading questions were asked and circumstances were posed, such as finding a gleaming new Jaguar in one's driveway at home. (This was done for the benefit of the boys.) One's reaction when invited for a cruise on a shining white yacht was another query. Finally, the important question was asked, "What is beauty?" One very sensitive girl responded:

... Beauty is a word used to describe something or someone wonderfully lovely. Our eyes reveal to us all the beauty of the earth. Sometimes beauty becomes overwhelming, and cannot be described by all the wonderful words we know.

Her fraternal twin sister commented:

... Beauty is the amber sun setting behind some distant mountains that are rising above a sea of white rolling clouds. Beauty is looking down on a valley at night and seeing it aglow with lights. Beauty is standing on a mountain and seeing the valley and its fertile lands.

One very perceptive lad reflected:

From *Exceptional Children*, December 1967, pp. 279-282. Copyright © 1967 The Council for Exceptional Children.

... Beauty is an opinion. An opinion is not a fact. Beauty is many different things. Beauty to one person is not beauty to another person. Beauty to me is nature and culture.

Other questions have included these: Where is love? Where is hate? What is happiness? Is there a Santa Claus? (The latter question was patterned after the letter written in 1897 to the editor of the *New York Sun*.) Happiness was observed by one very gifted, if erratic, boy, as:

... someone who understands and cares. An adult who does the same kind of things you do or at least believes in them. ... Happiness is a victory, winning a race, or a football game. Also, a personal triumph, like doing something you were afraid of. ... But most of all, happiness is giving. ...

One of the girls commented:

... Happiness is many different things to many different people. It is a joyful, wonderful, warm feeling. It may even be a peaceful feeling of security. ... Happiness, to many women is getting a letter from their son or husband in Viet Nam after not hearing from them for awhile. ... Happiness is in every kind of deed you do for others. There is happiness in a smile. ...

Creative writing may be appropriate at any hour, in the early morning or the middle of the afternoon. The writer has given demonstrations during both morning and afternoon sessions. Here one may encounter a teachable moment when the emotional climate of the class is attuned to teacher and topic. The teacher's ability to recognize this condition comes with experience in the classroom, with a deep knowledge of one's children, and in an environment of acceptance on the part of both teacher and student. Children must know that their thoughts or comments will not be ridiculed. Also, the instructor must allow his students to criticize his ideas and proposals with immunity. In such an atmosphere, able children will give of themselves, expressing what they truly feel and believe, not just what they think the teacher wants to hear. Only under these circumstances will the students make an effort to be truly original and creative.

Use of Poetry and Literature. Gifted children are usually voracious readers; given the proper motivation they are equally active listeners.

Their tastes in literature and poetry can be cultivated to much more sophisticated levels than that of children's verse exclusively. The importance of the teacher's use of a rich, articulated delivery cannot be emphasized too much. The teacher may profit from speech classes, but he will also find the tape recorder and observation of his students to be of immeasurable value.

The author read extensively to his class. Among the works were: the poetry and *Just So* stories of Rudyard Kipling; *Cyrano de Bergerac* by Edmond Rostand; Oscar Wilde's story, "The Happy Prince," which is particularly appropriate at the Christmas season; Longfellow's "The Skeleton in Armor"; Noyes' "The Highwayman"; and numerous limericks. Shakespeare's *A Midsummer Night's Dream* was read by the children as a class.

Poetry may be effectively used as a vehicle in eliciting creative responses. The poem, "Nancy Hanks," by Stephen Vincent Benét was employed to stimulate the writing of letters and poems by the children to answer the mother's questions about "my son Abe." In similar fashion, children responded to Juliet's remarks to Romeo concerning the mutual hostility of their respective houses. The pupils developed the topic, What's a Name? For these written responses, every effort was made to emphasize the use of imagery and the painting of word pictures. Cyrano's monologue on his nose can be put to good use here, particularly if the instructor hams it up a bit.

Sensory Awareness. The teacher can readily develop in gifted children a very real appreciation for one's senses, particularly appreciation for vision and sound. On one occasion, the author used Beethoven's loss of hearing as an illustration. The children heard selected portions of the master's music (from Walt Disney's album of great composers) and remarks about his life. After listening to the musical passages, the children were asked to place their heads on their desks, close their eyes for one minute, and silently identify as many sounds and sound origins as possible. At the end of that period, a discussion was held to note the number and types of sounds heard and to develop listening awareness and increased concentration on hearing sounds. Finally, the children were asked to compare or

select the loss of the one sense that would be comparable to Beethoven's loss. Without hesitation, they selected the loss of vision. Following a remark made by the instructor, they wrote papers on the topic, *If I Had Twenty-four Hours Left To See*.

Another instrument which sharpens sensory awareness is the introduction of the exquisite Japanese verse, Haiku. Formation of these delicate seventeen syllable poems poses a challenge to talented children. Since the Haiku must be written in three consecutive unrhymed lines of five, seven, and five syllables, respectively, and since it typically describes a scene in nature, considerable concentration is required. Some selected Haiku verses follow:

Spring rain falls softly,
Pattering on the grasses. . .
Which in turn bow low.

A blanket of snow
lay sparkling upon the ground.
White and beautiful.

Crickets chirp gaily
The silver moon shines brightly
Lo, a summer night.

The waves are breaking
across the bright, golden sand. . .
the wonderous sea.

An approach which resembles a projective technique requires the use of a landscape display. Such pictures should desirably be at least 18 by 24 inches, should be in color, and should make some reference to man and his environment, be it a road, cabin, or barn. One can then inquire of the children, "What is taking place here?" or "Tell me what you see." Their short stories will develop into essays concerning various continents, periods of time, and circumstances. Such a procedure may assist the teacher in gaining insight concerning his youthful charges.

Importance of Humor. Gifted children frequently have very sophisticated senses of humor and readily appreciate various forms of wit, whether they are themselves the object of the humor or a participant in its exchange. The teacher must be ready to be the butt of a joke. The author particularly enjoys puns, and for

several months a "pun for the day" greeted his pupils as they entered the room each morning. Their favorite was this one: "A classroom is like a Model T Ford; a lot of little nuts inside and a crank up front."

A good sense of humor lessens classroom tension and aids the teacher in obtaining genuine responses from such children. One might add that it makes the day a little richer for all concerned.

Evaluation of Creative Efforts

It is the author's opinion that one cannot appreciate the very personal experience of another human being, particularly the development of his original thought.

After papers were submitted by class members, the teacher read them carefully, focusing primarily on content, style, and original thought. The red pencil was used very sparingly in correcting spelling and grammar. Not infrequently errors were overlooked, particularly in the case of the shy child just venturing forth with his first literary offering. Every effort was made to allow this youngster to succeed.

In lieu of the typical grammarian's evaluation, the teacher posed additional questions for the child. Every attempt was made to insure that such queries were provocative and intellectually stimulating. A little phrase of Kipling's was used to good advantage, "I keep six honest serving men, they taught me all I knew. Their names are what, and where, and when, and how, and why, and who." Other questions were used in evaluating essays such as the one on beauty: Is beauty learned? Is it a strictly personal thing? Is it appreciated only through sight or through sound as well? Then is beauty ever changing? Such questions encouraged further reflection and in no sense squelched the ego of the child, since a writer, regardless of age, is most assuredly ego involved in his work.

Finally, in marking, a letter grade was never placed on a child's paper. The instructor utilized a very simple code of "Ex" for Excellent, "G" for Good, and "S" for Satisfactory. Since some record was required, these symbols roughly corresponded to A, B, and C. No paper was ever assigned a lower mark. This would not have been in keeping with the writer's philosophy; further, since this group was a high clus-

ter class it was highly unlikely that an unsatisfactory performance would appear. Using this point of view as a personal credo, the author encouraged many highly original and personal thoughts to emerge from these very talented children.

Conclusion

The preceding remarks do not purport to be the last word in developing creative efforts on the part of able pupils. These remarks are guidelines which may prove most rewarding in the hands of a skillful teacher. It is the author's

judgment that no amount of teacher preparation or subject matter can guarantee original creations on the part of his pupils. Rather, in the final analysis, it is the relationship which exists between teacher and student that nurtures and brings forth those dreams and fantasies tucked away in the child's world, a world, alas, from which most of us adults have too long departed.

ERNEST RAS ROWE, *Assistant Professor, College of Education, Idaho State University, Pocatello, Idaho.*

Introducing the Gifted Brief

Marvin J. Gold

This month "Out of the Classroom" is trying a change in format. Descriptions of activities are printed on the front and back of pages. This will allow the reader to clip the material for placement in a 3" x 5" file.

Since *Exceptional Children* allows photocopying (up to 100 copies) of material for free distribution within an organization or classroom, school administrators might find it valuable to reproduce these Gifted Briefs for appropriate professionals within individual schools or systems.

The activities included in these pages—Proximity, Chance-a-Date, Plans and Products, Proverbs, Character Switch, and Time Machine—make no pretense at being com-

Character Switch

Activity Objectives

To understand the interdependency of literary plot and characters; also, among characters.

Major Skills Employed

Evaluation, convergent thinking

Materials and/or Equipment

Appropriate reading materials

Procedures

This exercise attempts to assess the possible effects of replacing the personality of one character in literature with the personality of another. The effects may include likely variations in story line and resultant changes in other characters' personalities and actions. The pupils are assigned two readings. After determining that they are quite familiar with both plots and with the basic personalities of the major characters in both readings—novels, short stories, plays, poems may all be employed—the teacher suggests

Proximity

Activity Objectives

To see verbal relationships; to work cooperatively and competitively.

Major Skills Employed

Convergent thinking, divergent thinking, evaluation.

Materials and/or Equipment

Paper, pencils, stopwatch

Procedures

"Proximity" is an exercise that fosters the relating of one place and/or person and/or thing and/or fact to another. Starting with only one cue term, the student, individually or in a group, adds a related term. Working against a specified amount of time, additional terms are added singly. This continues until time is exhausted. "Proximity" is effective with bright children from grade 3 through high school. (Older students will find it most intriguing

From *Exceptional Children*, April 1971, pp. 593-596. Copyright © 1971 The Council for Exceptional Children.

pletely original. Neither should they be considered as substitutes for a well developed sequential curricular effort. The author presents them with the full knowledge that many teachers have for many years employed like activities, if not identical ones, in reinforcing and extending curricular goals. Often however, the generation of such ideas has been dependent on an individual's *own immediate needs* with no mechanism available for sharing such valuable ideas with other professionals. Realizing this, The Association for the Gifted (TAG) requested the author to gather and disseminate appropriate activity material that would benefit concerned professionals.

The *Brief* first began as a 5" x 8" card containing information for the classroom teacher working with exceptional children. Briefs were issued monthly by the Southeastern Materials Center, one of the SEIMC's sponsored by the Bureau of Ed-

ucation for the Handicapped at the Office of Education.

Readers might find that teaching-learning experiences often may be off-shoots of those *Gifted Briefs* that cannot be employed directly. Also, with experimentation (and some modification) teachers of other exceptional youngsters may find suitable ideas for their use.

Although this month's effort is an individual one, it is anticipated that future ones will represent the combined thinking of several persons. Feedback would be appreciated on the effectiveness of this month's material and the value of periodic issues of *Gifted Briefs*. The submission of additional ideas is encouraged. Direct comments and materials to The Editor, *Exceptional Children*.

MARVIN J. GOLD is *President Elect, The Association for the Gifted, The Council for Exceptional Children*.

CHARACTER SWITCH, Continued.

a character substitution. The students then speculate on changes that might come about.

Activity Modes

Individual: Rewrite appropriate passage of a given piece of literature in light of the character switch.

Small group: Dramatize one section of the original story; then improvise the same scene as affected by character switch.

Class: Critique the accuracy of the several individual and small group activities.

Illustration

Substitute Kipling's Elephant Child for Dr. Seuss' Horton.

Variations

1. What would happen if a particular character were eliminated from a story?
2. Imagine that a character chose an alternate action to the one he actually followed.

PROXIMITY, Continued.

when played around a particular theme e.g., Spanish vocabulary, chemical relationships, ancient Greece.)

Activity Modes

Individual: Child builds his own "chain," keeps record to compete with himself over time.

Small group: Competing teams have 5 minutes to prepare lists. Longest without error wins.

Class: Children called at random add items to list.

Illustration

"New York" (cue), "New Amsterdam," "Holland," "Edam cheese," "milk," "cow," "jersey," "sweater," etc.

Variations

1. Go in as few steps possible from the cue to an unrelated terminus word.
2. Work from the cue term back to itself without repeating any item.

Chance-a-Date

Activity Objectives

To develop research skills; to develop the ability to make "educated guesses."

Major Skills Employed

Convergent thinking, evaluation, extrapolation

Materials and/or Equipment

Pair of dice, library resources

Procedures

The pupil is given a pair of dice which he employs to determine a date that he will either research or speculate on, depending on whether it is pre- or post-1971. First roll one die to determine the number of digits in the dates. Then the student rolls both dice the number of times that there are digits in the date. (When 6 appears on one die it equals 0; $5 + 5 = 0$). After the date is developed, a final roll of a single die determines whether it is B.C. or A.D.: An even value is B.C., an odd, A.D. The child is then as-

Proverbs

Activity Objectives

To develop an ability to analyze proverbs; to appreciate the effectiveness of nondirect statements; to add to a feel for language

Major Skills Employed

Analysis, translation, synthesis

Materials and/or Equipment

Dictionary, thesaurus

Procedures

Following an analysis of standard proverbs, stimulus statements are presented to students. Utilizing a dictionary and/or thesaurus, the students attempt to generate their own proverbs from such stimulus phrases as: Love is better than hate; it pays to cooperate; Certain things should not be tolerated; There are many worthwhile things to do in life.

Activity Modes

Individual: Develop as many proverbs from stimulus statements as possible within 30 minute period.

Time Machine

Activity Objectives

To gain appreciation of the effect of individual personalities on history; to gain insights into the complexity and possible solutions of modern problems.

Major Skills Employed

Analysis, evaluation, synthesis

Materials and/or Equipment

Supportive source material

Procedures

The "Time Machine" transports a figure of the past to the present in an attempt to solve a particularly disturbing modern problem. Generally this figure should be someone whose work, background, and attitudes have prepared him to solve the specified problem. After analyzing the character's experiences related to the topic

Plans and Products

Activity Objectives

To encourage imaginative speculation; to foster appreciation for the value of problem solving and a methodological approach to it.

Major Skills Employed

Evaluation, convergent thinking, divergent thinking, hypothesis generation and testing.

Materials and/or Equipment

Library resources, appropriate resource experts

Procedures

After studying and discussing a variety of inventions and plans developed to aid man, the teacher encourages students to speculate upon the many undeveloped but needed products and ideas. There may be no imposed limits or the speculation might center around a single parameter only, e.g. environment improvers, field games, productive employment of waste materials, etc. Pupils work individually and/or in groups determining priorities of need, present potential for a solution, and interest in solving a particular problem. When a needed product or plan is decided upon, students

TIME MACHINE, Continued.

itself, the student is encouraged to draw inferences as to how a figure of the past might handle a modern problem.

Activity Modes

- Individual:** Researching a character and topic; writing a report, play, or diary entry.
- Small group:** Panel discussion; dramatization of steps leading to a solution.
- Class:** In committees, children explore the appropriateness of one of several historical figures who could handle the problem. Class makes a decision as to the most appropriate character.

Illustration

Theodore Roosevelt is charged with solving modern ecological problems.

Variations

1. Have a leading figure of the present transported back in time.
2. Have this same character sent into the future.

PLANS AND PRODUCTS, Continued.

prepare specific plans of attack, and where possible test them.

Activity Modes

- Individual:** Students work independently on same problem. Analysis is made of the several approaches.
- Small group:** Hold competition among groups to determine best problem solving plans. Where appropriate invite an outside expert to serve as judge.
- Class:** A community need is determined. Class develops a plan of solution, seeks community and official endorsement, and implements plan of action.

Illustration

Class decides that senior citizens are generally ignored in their community. Ways of involving them in more activities and a plan for more complete utilization of their skills is developed.

Variation

Using a science fiction approach, students describe the development of a very exotic product or plan. Either a dramatic or literary format may be employed in making presentation.

CHANCE-A-DATE, Continued.

signed or chooses topic on which he works. Topics may include food, war, democracy, disease, homes, population distribution, etc.

Activity Modes

- Individual:** Pre-1971—research paper; post-1971—creative writing exercise.
- Small group:** Pre-1971—dramatization; post-1971—panel of "experts" discuss topic.
- Class:** Develop a one day newspaper covering a variety of topics appropriate for the date chosen.

Illustration

First roll of one die (4) signifies 4 digit number; next roll 5 and 1; then 2 and 6; then 3 and 3; finally 5 and 5. Date is 6260. One more roll of die produces even number. Therefore the date of the topic is 6260 B.C.

Variation

By developing a master topic list of subjects appropriate for a particular group, chance selection of a topic in addition to chance selection of a date can add to the "game" quality of the activity.

PROVERBS, Continued.

- Small group:** Groups compete attempting to develop many proverbs from a single stimulus.
- Class:** Teacher offers a stimulus statement. The student who generates the first proverb offers the next one. Continue for 30 minutes. The class attempts to compete with itself over time by keeping track of the number of quality proverbs generated each session.

Illustration

Stimulus: "There are differences among people that should be respected"; Generated proverb: "Bread is baked in all manner of ovens."

Variations

1. Pupil develops his own stimulus statement and matching proverb.
2. Students are asked to translate common proverbs.
3. Students translate each other's proverbs to determine how near the proverbs come to the stimulus statements.

EXTENDING READING SKILLS INTO TODAY'S WORLD

WANDA ROGERS
SUSAN RYAN

Wanda Rogers is a sixth grade teacher at the Miami Valley School, Dayton, Ohio. Susan Ryan is teacher at Buchanan Elementary School, Livonia, Michigan.

What can I do for a child who gets 100% on every workbook page and because of boredom distracts others?

What am I to do in my reading group with Billy who is reading on an eighth grade level?

Johnny has a gift for creative expression and now would benefit from instruction in the fine points of writing; but frankly, I feel inadequate in the area, and I don't really have the time for the specialized instruction he needs.

These were questions raised by classroom teachers at Buchanan Elementary School as we began evaluating our reading program in the intermediate grades. While certainly the basal program met the needs of many students, for some youngsters the skill work already taught and mastered provided no challenge nor room for meaningful growth. We organized a special reading class for these children, drawing membership from fourth, fifth, and sixth grades. Approximately forty students were selected from teacher recommendations based on their mastery of basic reading and writing skills.

Having reached the decision to meet the needs of these children, we focused our attention on the more sophisticated reading skills. We wanted to provide experience not only in enjoyment reading but in "work type" reading as well. The wide range of skills we sought to refine included reading critically, seeing cause effect relationships, interpreting poetry and literature, thinking logically and analytically, making inferences, drawing conclusions, and forming generalizations.

From *TEACHING Exceptional Children*, Winter 1973, pp. 58-65. Copyright © 1973 The Council for Exceptional Children.

Not being tied to a single textbook, we were free to create a framework within which skills could be presented. A content area approach based on today's changing world provided the relevant context we were seeking. This content fell logically into the following units: study skills, the newspaper, speech, social studies, science, poetry, the short story, and drama. Teaching the study skills, newspaper, and speech units first were important as they provided a background of skills which we could then extend into our other units. We found value in alternating the "work type" reading with the "enjoyment" reading to maintain maximum interest and to add spice.

A team of three teachers rotated the teaching of the units during our regular language arts time block. Children who had mastered basic skills in their basal reader and who could benefit from extended experiences were selected for the multiage class. Because the content was based on today's changing world, a child was able to remain in the program more than one year and continue to gain fresh extensions of his skills.

STUDY SKILLS

The study skills unit provided the background of skill needed in later units—skills such as outlining, notetaking, summarizing, skimming, and speed reading. The S.Q.4.R. study approach was introduced: Survey, Question, Read, Recite, Rite, Review.

Using a seventh grade geography textbook, we began the first step of our study approach by surveying a chapter looking for the "editorial aids," such as the outlines formed by the headings and subheadings, the pictures, charts, and graphs. The questions which arose as a result of the survey step provided a purpose for our reading. After reading, the students "recited" to themselves; they recalled the important ideas and wrote down details they wanted to remember. Several days later they reviewed their notes. The children were amazed at how much they were able to learn when they went about systematically studying a body of material. Their amazement was no greater than ours when we administered a comprehensive test over the material studied and found the lowest score to be 87 out of 100 possible.

NEWSPAPER

Our second unit brought a local newspaper into the classroom with the immediate consequence of making today's world the content. The children learned to skim a straight news story, identifying the who, what, when, where, and why of the summary lead and recognizing the inverted order of facts. They also learned to differentiate between relevant and irrelevant details. Using the analogy of frosting on cake, we proceeded to analyze an article by cutting away the frosting to discover the cake!

In the study of editorials the children understood the necessity of logical thinking to communicate effectively with others. They learned to recognize objectivity or bias on the part of the newsman. They became aware of the possibility a writer has to sway others through the use of inferences. By comparing stories on a local rock festival published in two different newspapers,

the children saw that word connotation could change their interpretation of facts. This experience made them more aware of the effect words have on the newspaper reader, and on them! They were awed by the power of the printed word. As one youngster put it, "You can take something that happened and just by the words you use, turn it into anything you want!"

At this point it seemed appropriate to study the techniques of propaganda. Hilarity entered our classroom as two students sold memberships in a reducing salon using a testimonial from a beautiful movie star and a bandwagon appeal. As the salesman displayed before and after pictures, the familiar voice of Bert Parks sang, "There She Is, Miss America." Purposely going about the task of swaying others was an effective way of concluding our newspaper unit.

SPEECH

Our speech unit gave us the opportunity to build upon and expand many of the skills taught previously. The skill of logical thinking, so heavily emphasized in the newspaper unit, became relevant as we tried to communicate verbally. The children learned to use a logical approach in *organizing* their material, *supporting* an idea with facts, and *presenting* appropriate illustrations and personal examples. Notetaking skills were called into play as they researched material, and outlining skills were used in organizing their speech for delivery.

We delivered a variety of speeches, each with a specific purpose. The introductory speech gave us our first formal speaking situation. It presented us with the problem of discovering unique characteristics of each other. We learned who saw themselves as sunflowers and pussywillows, the headaches of living with seven brothers and sisters, and what possessions are treasured most.

Thinking quickly and logically on their feet was the purpose of the impromptu speech. The children were given a question that required them to form opinions. They opened their speeches stating their opinions and logically presented their reasons, concluding their speeches with a restatement of their opening remarks.

A demonstration speech gave the children the opportunity to explain a process using a prop to enhance their presentations. Demonstrations presented to the class included the fine art of popping corn, the complexity of raising tropical fish, and the intricacies of punting a football.

The Bulls Eye Speech taught the necessary ingredients of a problem solving speech. Children learned five steps:

1. Wake Up, used to attract attention.
2. This Concerns You, telling the audience why they should listen.
3. Generally Speaking, stating the problem and giving the background.
4. For Example, giving specific illustrations.
5. What To Do, moving the audience to action.

Children tackled problems ranging from their own school to world situations, such as ecology and Vietnam.

Previously gained knowledge of propaganda techniques was used to give a sales pitch. As children sold books, or favorite possessions, their classmates evaluated the speeches identifying the techniques used.

Their adeptness as public speakers was evident when they were asked to speak at a school PTA meeting. It was obvious to the parents that a great deal of learning had brought them to this point. They were impressed not only with the content and organization of the speeches but also with the poise and enthusiasm with which they were delivered.

As the unit progressed we watched the children develop techniques of good delivery, grow in their ability to evaluate and criticize constructively, and accept criticism and use it to their advantage.

POETRY

Enjoyment was the ultimate aim in our study of poetry. Consequently, a variety of poets, subjects, and styles of poetry were used.

Because poems were read for enjoyment, there was no deliberate attempt to dissect the poetic devices nor probe author's intent. Children naturally delighted in discovering word pictures that pleased them such as "burnished beetles black" from the poem "Motor Cars" by Rowena Bastin Bennett. This "teachable moment" gave the opportunity to introduce the term *alliteration*. Similes, metaphors, personification, and other poetic devices were introduced and learned just as effortlessly. Vivid imagery, rhyme, and rhythm were discussed when they were an intricate part of the poem's enjoyment.

Children had the opportunity to draw inferences as they attempted interpretation of the poems. It was important, we felt, for children to make their personal inferences. And most important was to feel that someone else had shared the same experiences as they and was able to capture that experience in writing. Once again the children were awed by the power of words.

In our study each child selected poems on a particular subject as well as those by one poet in order to compare and contrast. We discussed various views on a rainy day, of dawn, of loneliness. We compared "Birches" with "Stopping by the Woods on a Snowy Evening" as we discovered Robert Frost. We began to identify elements of style.

With this background the children began to write their own poetry. We emphasized expressing their own ideas with consideration for the poetic devices that are available to a poet. A great deal of self-searching occurred as the children attempted to capture their own experiences in a relatively few well chosen words. The following poem shows the effect of the poetry study on a fifth grade student.

THE SUN

In the sky there is a lion
With a golden mane of fire.
He lays higher than the moon,
Maybe even higher.
Quiet as a mouse he goes,
Creeps across the sky
But at night he always hides
I know not where or why.
When he roars
He makes a breeze
He makes wind moan
And trembles trees.
At night his eyes
Are just two stars
To shine on houses,
Hills and cars.
Sometimes he's fierce,
And sometimes tame,
I think it's a lion,
But the Sun is his name. *Linda Seasley*



SHORT STORY

The main purpose of our short story unit was to expose the children to a variety of excellent short stories and to lead them in discovering the elements which characterize this form of literature. Carefully selected stories were read to the children to demonstrate the elements basic to this literary form: theme, plot, characterization, point of view, tone, and setting.

"The Red Dog" by Howard Maier was an excellent example of a strong theme. We learned about plot by drawing a story line for "Leiningin Versus the Ants" by Carl Stephenson. One of the most memorable characters the children met came from "The Terrible Miss Dove" by Frances Gray Patton. Miss Dove seemed to come alive as we discussed the techniques used by the author to develop her character. We discovered that similes and metaphors were used in prose as well as in poetry. We became aware of how conversation could be used in developing a character. "That's almost as good as 'Miss Dove'," became the supreme compliment one child could award another's character sketch.

As these stories were read skills introduced in previous units were seen in a new perspective—supporting a main idea with detail, logical sequencing of events, drawing inferences, forming conclusions, and seeing cause effect relationships. All of these skills were practiced as the students created their own short stories.

The only difficulty encountered in this unit was the "heavy reading" faced by the teacher. Many of the children's original stories ran upwards to thirty pages!

SOCIAL STUDIES

Our unit in social studies began our "work type" reading. In this area much of the content was condensed, vocabulary was often specialized, seemingly unrelated facts had to be organized by the youngsters into some proper relationship, and previous knowledge had to be recalled in order to develop a concept.

Many specialized skills thus came into play in this area. Such skills included reading maps, diagrams, and charts, seeing cause effect, grasping the sequence of events, and comparing, and contrasting. We found time was well spent in teaching "reading" of pictures, as children learned to turn their attention to details and implications. It was also an appropriate time to teach the interpretation of symbols, a necessary reading skill.

Using the simulation technique—a working model of some physical or social situation—the youngsters read maps of hypothetical countries. With the information given on geographic location and natural resources they made inferences as to where people might settle, the means of traveling through the nation, occupations of inhabitants, products that could be produced, and resources that the nation would need from outside. Using more than one country led to comparing and contrasting.

This was an appropriate time to build on previous use of cause effect. As they hypothesized answers for their make believe countries the children were constantly questioning the effects this might have on the country as a whole. They were able to discover long as well as short term effects, as seen in this brief dialogue.

"By developing our resources of gravel, gold, lumber, and fishing we can create lots of jobs."

"And that should bring more people to my resort area."

"All right—but with all those people you need to worry about food supply. Can we produce enough ourselves or will we have to import?"

"And housing could become a problem."

"Yes, but housing needs will help our lumber and cement industry."

"We need to plan our community so that we can handle all of our problems."

"We need to be careful and not let our environment run away from us."

"But if we anticipate all these problems before they develop, and plan for them, maybe we can keep them from ever becoming a problem."

SCIENCE

Science reading called for slow, careful reading. It called for mastering a more technical vocabulary and for great attention to details which supported the main idea. Science reading gave the children experience with classifica-

tion, seeing cause and effect relationships, grasping meaning from symbols and observations, working with problem solving situations, and forming generalizations. In our science unit an attempt was made to provide opportunities for using scientific research methods.

The students studied the ocean with an emphasis on the use of undersea exploration and possible uses of the oceans in the future. They expanded their vocabulary as they read scientific materials on the ocean. They collected, synthesized, and classified data in the form of scientific evidence. They did their own problem solving as they calculated height and depth and applied underwater pressure techniques. They were able to form generalizations about the oceans and water life and the implications this had on our future.

DRAMA

The children saw drama as another form of communication through a study of its history and development. They saw the lasting contributions of different periods such as the chorus from Greek theater, allegory from the miracle plays, and character development from the Elizabethan period. The children recognized these forms being used as they presented readings of contemporary plays. In executing these readings the students began to see the importance of the actor in successfully communicating the playwright's message to the audience.

The Broadway musical was discussed as a unique American contribution to the theater. Children wrote brief biographies of such people as Rodgers and Hammerstein, Lerner and Loewe, Jerome Robbins, and Burt Bachrach. While listening to the musical scores of *West Side Story* and *My Fair Lady*, we discussed how these productions grew from the works of Shakespeare and Shaw.

Looking at the light side of drama the children found delight in performing stunts and reading and writing their own short skits. They became intrigued with the idea of puns and thoroughly enjoyed creating and illustrating their own.

The drama unit afforded an opportunity to add new depth to the skills of interpretation, drawing inferences, and making generalizations. All of these skills were utilized as we read the Greek tragedy *Antigone*, discussing the motives of characters and generalizing about life under a dictatorship.

The children came to realize that there are some plays, as there are books and poems, that communicate across time. They found the common ingredient was the theme dealing with human nature.

One of the main advantages to a program such as we have presented here is that no costly materials or special teachers are needed. Such a program may be used in a multigrade approach or by a single teacher in a self-contained classroom. It can be done with forty children or four children. It is, of course, hard work on the part of the teachers involved; we felt it was worth it when we saw what it did for an often neglected group of children.

Originally we had set out to design a program which would extend and refine skills of already competent readers. As the year progressed we found the children were exceeding far beyond our expectations. The high level of thinking which they achieved amazed us. One child expressed it when he said, "I didn't know I could learn so much!"

Developing Multiple Talents in Exceptional Children

C. JUNE MAKER

Articles and presentations directed toward teachers of exceptional children often include the exhortation "Develop the child's strengths as well as ameliorate his weaknesses!" Teachers are told to look for the peaks as well as the valleys in individual profiles. What often happens, however, is that the valleys are so low and the weaknesses so noticeable that we find ourselves spending so much time on remediation that there is very little time left for developing the potential gifts and talents. Methods courses concentrate on remedial techniques, articles discuss new strategies for "skill development," and textbooks emphasize methods for diagnosing and ameliorating weaknesses.

A real commitment to a talent oriented approach requires more than one teacher's belief in the necessity of developing the child's strengths. Often the child's talents may be in areas not usually considered "academic." In fact, these talents may interfere with the planned curriculum, or may even be seen as a nuisance because they are unusual or unconventional. The child's participation in such activities may be relegated to the realm of free time or after school and weekend activities. Chesler (1974) gave the following two examples of learning disabled children with special talents:

Emphasis on the development of talents can accomplish several desirable goals. First, a child can develop talents into career interests or satisfying hobbies. Second, self concepts can be greatly improved through the child's own perception of his or her activities as well as through peer perception of his or her activities.

Here are some examples from among the children I have known. One boy started making drawings portraying the third dimension when he was about four years old. He would draw trains running into the distance, telephone lines and poles leading near and far, and skies full of airplanes at various distances and positions. In his "free time" during his early school years, he drew reams and reams of these pictures. His teachers and parents looked upon this as a curiosity at first, and later as a distraction, and annoyance.

Another adolescent boy, who is still struggling mightily with the three R's and language concepts, six or seven years ago became highly absorbed in butterflies and moths—catching them, identifying them, learning about their life cycles. He also was interested in plants. He learned to identify the plants in his neighborhood and to call them by their scientific names. After Christmas he would go around the neighborhood gathering up discarded trees and try to plant them to see if they would come to life again. In short, he was intensely and consistently curious about growing things. But others looked upon these interests as frivolous and "beside the point," and turned his attention back to phonics. Perhaps these interests and abilities could, by now, have seen him well on his way toward being a creative horticulturist. But no one has ever tried. (p. 13)

Third, deficit areas can often be improved by working through areas of strength.

Though most of us would not question the first two results, many would probably be skeptical about the third. There is, however, evidence from research that emphasis on the development of certain kinds of strengths can improve weak areas. For example, Carlson (1974) reported the use of a multiple baseline-successive treatments model in which she used a child's creative strengths in fluency and elaboration to increase academic achievement and evaluative efforts. She reported substantial improvements in the child's goal directed behaviors, her ability to assess her own progress, and several areas of academic achievement. Torrance (1977) also reported the use of strengths in fluency and flexibility to develop originality. Most of the children in Torrance's report also improved in math, spelling, and reading achievement scores.

Calvin Taylor's (1963) "multiple talent" approach has received a great deal of attention in general education, as well as in education of the gifted. Taylor, a researcher in the field of creativity, stated that schools have traditionally dealt with and encouraged only one type of talent—academic—and that by limiting our efforts in talent development to this one area, we give only 50% of our students a chance to be "average or above." As we increase our emphasis on areas such as creativity, communication, planning, forecasting, decision making, drama, and performing or visual arts, Taylor stated that as many as 90% may have a chance to be above average in some talent area. Taylor is not saying that 90% of all children are gifted, but that they may be above average in some talent area if we emphasize enough talent areas. Whether

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he is correct about the percentage is not particularly important. What is important is that we all know from experience with children that most do have at least one strong area. The multiple talent approach has been used successfully in many classrooms, and has been the subject of quite extensive programs of research in curriculum development and implementation. Reports of this work can be found elsewhere (Taylor, 1962, 1963, 1964a, 1964b).

Other approaches to the development of multiple talents or strengths have been developed by Torrance (1962, 1974) and Meeker (1967, 1969). Torrance suggested using a checklist of "creative positives" to identify creative talents of disadvantaged and handicapped children, and using these talents as vehicles for the development of academic abilities. Meeker took an approach based on Guilford's (1967) Structure of Intellect model of human intelligence. She developed an elaborate system for assessing very specific intellectual strengths and deficits, and provided guidelines for systematically working through strong areas to develop weak ones.

The following section presents several teaching ideas based on Calvin Taylor's multiple talent approach and lists a number of publications to which the teacher can refer for many more teaching techniques.

ACTIVITIES FOR DEVELOPING MULTIPLE TALENTS

Map Activities

The activities in this section suggest ideas for developing multiple talents through using a state map. The map of Illinois was used in this example, but you can use any state map and simply change the names and places. The same types of activities could be designed for use with telephone directories, catalogues, newspapers, and other items from around the house.

The activities are designed for students without teacher direction except for Activity 3 under Dramatic Talent. They can also be used for whole class participation. Many of the activities can be used in developing more than one talent, so do not be overly concerned about the placement of each activity.

DECISION MAKING

1. Your father's new job requires him to travel to Quincy, Jacksonville, and Springfield because the company's three offices are located in those cities. You bought your new home in Macomb only 2 years ago. Decide (a) whether your family should move, (b) if they move, which town they should live in, and (c) what kind of car Father should have.
2. Explain your reasons for making each of the decisions.
3. Decide where you would live if you could live anywhere in Illinois.
4. List all the routes you could take to get from DeKalb to Paxton. Decide which is the best route to take and ex-

plain why you made this decision.

5. Your family is considering moving from Vandalia to Fairfield. List all the arguments you can think of for and against moving.

FORECASTING

1. Predict what a map of Illinois will look like in the year 2000.
2. Predict what would happen if all the interstate highways were suddenly destroyed.
3. Predict what the map would look like if Chicago were at the southern tip of the state.
4. Explain how a map of Illinois was different 20 years ago.
5. Explain how this map would be different if there were no large cities in the state.
6. List all the things a map maker had to know before making the map of Illinois.

PLANNING

1. You have a week's vacation and would like to go on a camping trip. Plan a trip to a place in Illinois. You may want to consider some of the following:
 - a. How many miles you are traveling.
 - b. How much time to spend at each place.
 - c. How much food to take.
 - d. What kind of equipment to take.
2. Plan a trip from Harrisburg to Chicago. Tell what routes you would take. Can you make the trip in 6 hours? If not, how long will it take?
3. You have a cousin who lives in Sandwich, a friend who lives in Watseka, and grandparents who live in Waterloo. You have 2 weeks vacation from school and want to visit all of them. Plan your vacation. Some things you may want to consider are:
 - a. Time to spend with each.
 - b. How to get there.
 - c. Which routes to take.
 - d. Places to stop on the way.
 - e. What to take.
 - f. What to do with your pets while you are gone.
4. Make a list of all the things an engineer would have to consider before building a new interstate highway across Illinois.
5. List all the reasons you can think of that would make Peoria a bigger city than Mt. Vernon.

COMMUNICATION

1. Using a map, explain to someone how to get from Rockford to Joliet.
 2. Without using a map, tell someone how to get from Rockford to Joliet.
 3. Explain to a deaf person how to get from Rockford to Joliet.
 4. List as many words as you can that describe a map.
 5. Make a map for a blind person.
-

CREATIVITY

1. Design some symbols that could be used to make maps better. You might want to make symbols for such things as:
 - a. Road construction.
 - b. Service stations that are open all night.
 - c. Telephone booths.
 - d. Motels.
 - e. Toy stores.
 2. List all the ways this map could be used.
 3. List all the ways that a map of Illinois is like a water tower.
 4. List all the ways that a map of Illinois is different from a map of Kentucky.
 5. List all the things that could happen if all the bridges over rivers were torn away.
-

DRAMATIC TALENT

1. Pretend you are a map of Illinois. Tell the class about the state as if you were a map.
2. Make up a play about the five characters listed. They are trying to eliminate all the maps in the world.
 - a. A city.
 - b. An interstate highway.
 - c. A river.
 - d. A small town.
 - e. A state park.
3. Teachers make a map out of the classroom and let different students act out different parts of the map. Some can be symbols of such things as interstate highways, airports, rivers, county markers, secondary roads, colleges or universities, etc., while others are numbers, letters, or paper. You may want to just select a small area rather than the entire state for this activity.

4. Make up a skit using the following three items as props:

- a. A map of Illinois.
 - b. A piece of toast.
 - c. A record.
-

ARTISTIC TALENT

1. Make a picture using only map symbols.
 2. List all the ways that you could make this map more beautiful.
 3. Make a map collage.
 4. Make a map without drawing any lines.
 5. Enlarge one section of this map.
-

MUSICAL TALENT

1. Find or make up a rhythm for each of the map symbols. How is the rhythm of an interstate highway different from the rhythm of a two lane paved road? How is it different from an unpaved road? How is the rhythm of a county line different from the rhythm of a river?
 2. Make up a sound for each of the map symbols. How is the sound of a city different from the sound of a small town like Bogota? How is the sound of a state park different from the sound of an airport?
 3. Make up a Map Song using the sounds and rhythms you have created.
 4. Choose a musical instrument and make up a song about Springfield.
 5. Find a song that best expresses your feelings about maps.
-

ACADEMIC ABILITY

1. Find where you live on the map. Make an X with your pencil. Find a place that is 20 miles from your town.
2. Compute the distance from Springfield to where you live. If your car gets 15 miles for each gallon of gas, how many gallons would it take to get to Springfield?
3. Find a town that is north of where you live. Circle it with your pencil.
4. Find a town that is south of where you live. Draw a line under it.

- Put a check beside the river that is closest to your home.
- Find the shortest route from Pleasant Hill to Tuscola.

Book Reports

Just by modifying the traditional format of book reports, a teacher can encourage the development of multiple talents. An added bonus could be more interest in reading!

The following activities can be used in a variety of ways: They can be listed as options on a learning contract, written on task cards and kept in a "book report" learning center, used as group activities, or kept as a file of teacher ideas to suggest book reporting formats to individual children.

DECISION MAKING

- Write five things that would make your book better.
- Make a list of the interesting words you found in the story and tell why you think they are interesting.
- Write 10 words that tell about the story, and then decide which one of the words tells the most about your book.
- Give your opinion of the book and the reasons for your opinion.
- Try to convince someone who has a different opinion about your book that you are right.
- Write descriptions of your favorite characters in the book.

FORECASTING

- Predict what someone who reads the book 20 years from now will say about it.
- Predict what some historical person would have said about the book if he or she had read it.
- Find and list cause and effect relationships in the story.
- Predict what a character in another book would say about your book.
- Predict what you would say about this book when you are 25 years old (50, 99, etc.).
- Write what might happen in the next chapter of your book.

PLANNING

- Plan a play based on your book. (It does not have to be given—just planned.)

- List all the things you would need to do before presenting a play based on the book.
- Plan a bulletin board display for your book.
- Plan a party to introduce your book to your friends.
- List all the problems that a character in your book had that were caused by someone else in the story.

COMMUNICATION

- Make a puppet of a character from your book.
- Write an imaginary part that could go in your book.
- Make up a new character for your book.
- Write a different ending for your book.
- Write a story based on your book.

DRAMATIC TALENT

- Write or tell how the book is the same or different from your life.
- Present a play based on your book.
- Give a book report to the class as you think one of the characters from the book would present it.
- Read your book (or a part of it) to some younger children.
- Give a report to the class the way your book would give it.

ARTISTIC TALENT

- Draw a series of pictures to retell the sequence of your book.
- Make an original cover for your book.
- Use crayon, chalk, paint, etc., to illustrate your favorite part of your book.
- Make a bulletin board display for your book.
- Make a comic strip of your book.
- Make a poster to "advertise" your book.
- Make a diorama.
- Make a mural.

MUSICAL TALENT

1. Write a song or play about your book.
 2. Find a song that expresses what you think or feel about the story.
 3. Discover or make up a rhythm or sound for each character in your book.
 4. Make up a musical sentence about your book (only using sound and rhythm).
 5. If the characters in your book could only sing to each other, name some of the songs they would sing.
-

ACADEMIC ABILITY

1. Look up something about the author.
 2. Write a report on the area in which your book takes place.
 3. Write to the author of your book.
 4. Write a report on the period of time in which your book takes place.
 5. Write a report on anything in the book that interested you.
-

CREATING A LEARNING CENTER

Teachers can create a permanent "multitalent" learning center in any classroom, where children can choose from a variety of activities that would develop several talents. The ideas presented can serve as a beginning for such a center by simply being written on task cards and placed in a center with plenty of maps. If you are really interested in beginning a multitalent center, you could write these on 3 inch by 5 inch index cards and place them in separate recipe file boxes (a separate file box for each talent area). You can add other tasks for use with telephone directories, catalogues, newspapers, and other items.

RESOURCES

The ideas presented are only suggestions to get you started. A creative teacher can develop hundreds of activities in every talent area. The following resources contain ideas for developing multiple talents and cognitive strengths.

Igniting Creative Potential: A Report of Project Implode, 1971.

Bella Vista Elementary School
2131 East 7000 South
Salt Lake City, Utah 84121

This is an idea book with teaching activities in several talent areas for kindergarten through 12th grade. The project was based on Taylor's multiple talent approach.

Using the Creative Strengths of a Learning Disabled Child to Increase Evaluative Effort and Academic Achievement, 1974. Dissertation by Nancy Carlson, Department of Elementary and Special Education, Michigan State University.

This is a good resource of diagnostic batteries, teaching procedures, and evaluation instruments found to be useful in working with learning disabled children. The instruments and procedures could also be used for children with other handicapping conditions.

Clues to Creative Teaching, *The Instructor*, 1963-1964, p. 5.

This is a series of 10 monthly articles written by Calvin Taylor. Titles include "Bridges from Creativity Research to Teaching," "Learning and Reading Creativity," "Listening Creatively," "Developing Creative Thinking," and several others.

SOI Abilities Workbooks
SOI Institute
214 Main Street
El Segundo, California 90245

Based on Guilford's SOI model, Meeker has developed five workbooks—*Cognitive, Memory, Evaluation, Convergent Production*, and *Divergent Production*. Specific teaching activities cover all content areas and grade levels.

These are not the only resources, but will provide a beginning for developing many talents in our exceptional children.

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V. Research in Gifted Education

Introduction

Research in gifted education is often viewed by educational practitioners as sterile, ivory tower, and idealistic. They ask (and it is a reasonable question), "How will this research help me meet the needs of the students in my classroom?" Unfortunately, some of it will not be helpful at all. This occurs when a research topic is whittled down for the sake of objective data to a meaningless, but measurable, question. While such controlled experiments may yield statistically significant data, they do so at the expense of losing all practical application. Other studies, designed to construct and validate curriculum materials, attitude surveys, and interest inventories, will have a direct impact on classroom activities. These studies range from formal research designs to be used for journal publication, to commercially subsidized research validating materials to be marketed, to school systems' informal research projects on "home grown" curriculum packages. This entire spectrum of curriculum research plays an important role in providing a basis for curriculum evaluation and revision.

There is a third category of research, however, consisting of studies that attempt to prove that what we do for the gifted is (a) appropriate, (b) necessary, (c) effective in achieving the goals of gifted education, and (d) good only for the gifted. While the findings of researchers in this category may not have an immediate impact on classroom activities for the gifted, they do provide the rationale for establishing a gifted program in the first place.

Research of this kind serves several purposes. "Unless the teacher of the gifted or program director can stand before the board of education and answer those haunting questions: we may be in danger of winning the battle but losing the war" (Renzulli, 1980). Research addressing "those haunting questions" (four of which are listed in the previous paragraph) provides documented evidence as to why a gifted program is necessary, and why the way in which it has been developed is the best way.

Multiply that one case of the teacher versus the board by the number of boards of education in this country, and it becomes evident that the existence and the quality of such research will determine the longevity of the present gifted movement. Long time observers of the gifted movement have witnessed several cycles in its popularity and acceptance. Sound research providing a defensible rationale for the existence of such programs is essential if the latest surge of enthusiasm is to be kept alive.

Another justification for this research centers around the insistence of parents, teachers, program directors, members of the board, and taxpayers to have valid evaluative data substantiating the worth of the gifted program.

The sad but true fact is that we can't really develop respectable evaluation designs when our programs are little more than patchwork collections of random practices and activities. Researchers and evaluators can only obtain effective results (and hopefully gain maximum support for their programs) when they are testing a model or comprehensive and integrated approach to programing. Now the program director can stand before the board of education and say, "Our program is based on (this or that) model and within this framework, our evaluation data reveals (thus and so)." (Renzulli, 1980)

Why, then, has this research not already been completed? Basically, because it is difficult, time consuming, and not particularly marketable in the product sense of the word. The research is difficult because of the openness of the questions and the restrictive aspects of formal research. In order for research of such questions to be meaningful, the concept of educational research may have to be broadened. The research is time consuming because of the longitudinal data necessary and because of the seemingly infinite number of variables present. And as for such research being financially worthwhile, commercial publishing representatives at conferences for the mathematically gifted are not likely to try to sell educators a defensible rationale for what they are already doing in the classroom. All these factors deter researchers from taking on the task

of proving that while certain activities are appropriate and effective for some children, they are not so for others.

The following articles present some of the research that has brought us to our present status in gifted education. Salvia, Clark, and Ysseldyke discuss their findings on "Teacher Retention of Stereotypes of Exceptionality." Their study addressing the impact of mislabeling a normal child as gifted or retarded is significant in light of the controversial categorization legislation that has been enacted in some states.

"Attitudes of Young Gifted Boys and Girls Toward Handicapped Individuals" was a study carried out to clarify the inconclusive evidence of previous studies. Lazar, Orpet, and Revie supported the findings of five other studies that found that girls were more accepting of disabled persons than boys were. In light of current research on genetic versus environmental influences, more research determining the causes of such attitudes would be of interest. In a similar study, Lazar, Gensley, and Orpet sought "to determine if the attitudes of a group of young mentally gifted children could be influenced . . . as a result of a special instructional program." Their use of a specially designed program to change attitudes not only provides for research based curriculum material in this area but functions as a research model for other areas as well.

Steele, House, Lapan, and Kerins set out to determine "Cognitive and Affective Patterns of Emphasis in Gifted and Average Illinois Classes." The instrument used to measure these patterns was the Class Activities Questionnaire. While the results of this particular study can only be generalized to limited settings, the study could easily be replicated in other areas to provide meaningful evaluation data. "Do Gifted Children Speak an Intellectual Dialect?" addresses the question of differentiations between language patterns of average and superior fifth graders. Jensen's study did not detect significant differences among these groups, but her work does represent the first of its kind to "investigate the relationship of language performance to intellectual, rather than sociological, factors."

The impact on programing of inservice training dealing with the guidance and education of gifted students was investigated in Fredrickson and Rothney's study, "Statewide Implementation of Classroom Practices for Superior Students." Their results found significant differences in the activities used by the teachers who received inservice training as opposed to those who did not. Thus, the study supports the need for structuring inservice training for teachers of the gifted.

In the final research article, Wallberg's "main question of interest was in the creative adolescent's adjustment to the high school environment." His findings in "Varieties of Adolescent Creativity and the High School Environment" suggest that a number of factors are associated with adolescent creativity. Further studies on developing adolescent creativity through the use of these related factors could result in innovative programing ideas for promoting creativity.

As with most research, the majority of these studies open up more possibilities for investigation than they close, leaving an infinite supply of unanswered questions to be researched. As research progresses, the questions will multiply; nevertheless, quality research can help meet the needs of students in the classroom.

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Teacher Retention of Stereotypes of Exceptionality

John Salvia/Gary M. Clark/James E. Ysseldyke

Before an experimentally induced stereotype of a child can be passed by a teacher to a child in the form of an expectancy, the teacher must attend to, comprehend, and retain the expectancy (see Barber, Forgione, Chaves, Claverly, McPeake, & Bowen, 1969). In actual classroom settings, the teacher's expectancy for the child and the child's performance and characteristics are interactive; the child's behavior can create teacher expectancy or modify existing teacher expectancies. This study sought to determine what happens to stereotypes of exceptionality in the face of normal behavior. When teachers in training are faced with an intellectually normal child who is improperly labeled, do they retain the stereotype by rating the behavior of children labeled gifted more positively than when the same child is labeled normal and by rating the behavior of a child labeled retarded more negatively than when the same child is labeled normal?

Procedure

Two groups of undergraduate students—special education ($N = 48$) and general education ($N = 117$)—were randomly assigned to three experimental conditions (55/condition). The subjects were told that they were participating in an experiment to evaluate the interrater reliability of a newly developed checklist. The checklist consisted of 27 items arranged in five categories (attitudes and reactions toward adults, attitudes toward tasks, attitudes toward own performance, motor reactions, and verbalizations). Each item was scored on a 5 point scale (strongly agree through strongly disagree).

In the first experimental condition, subjects were told that they were to rate mentally retarded children; in the second condition, they were told to rate normal children; and in the third condition, they were told to rate gifted children. Instructions were provided on a mimeographed sheet attached to the rating forms. The instructions were identical except

for the words retarded, normal, or gifted.

Each subject completed four separate ratings. The first rating completed by all three experimental groups was a stereotype. Subjects were asked how they thought a typical mentally retarded or normal or gifted child (depending upon the experimental condition) would be rated on the 27 items. Then, subjects were shown a videotape of a child completing the *Kohs' Block-Design Test*, the *Goldstein-Scheerer Object Sorting Test*, and the Vocal Encoding Subtest of the experimental *Illinois Test of Psycholinguistic Abilities*. After viewing the tape, subjects were asked to rate the child. The subjects in all three experimental conditions saw the same child. When the ratings of the first child were completed, subjects viewed and then rated the performance of the second retarded (or normal or gifted) child performing the same tasks. The same procedure was followed for the third child. The three children who were rated were Caucasian boys (ages 6, 8, and 10 years) who had previously been determined to have normal intelligence and to be free of obvious sensory or physical impairment.

Results

Four 2-way multivariate analyses of variance were performed—one each for the stereotype, child 1, child 2, and child 3. The two dimensions of the analysis were the labels and the curriculum of the raters. When the mean vector test for category ratings was significant (.05), the implied null hypotheses were evaluated by univariate F tests (Hummel & Sligo, 1971). Significant univariate F tests were subjected to subanalyses by the Dunnett method (Winer, 1962). Differences attributable to different curricula of the subjects were generally nonsignificant and are not reported below.

The results of the analysis over stereotypes indicated that children labeled gifted were seen more positively than children labeled normal on attitudes toward the task and attitudes toward own performance. Children labeled retarded were rated less favorably than children labeled normal on all five dimensions of the checklist.

From *Exceptional Children*, May 1973, pp. 651-652. Copyright © 1973 The Council for Exceptional Children.

When subjects evaluated the performances of actual children the results were less clearcut. For child 1, the labels produced no significant differences in the ratings of the child. When subjects observed child 2, those who were told the child was gifted rated him significantly more positively than those who were told the child was normal on attitudes toward the task. Those subjects who were told that child 2 was retarded rated him significantly less positively than those told the child was normal on verbalizations. The results of the ratings for child 3 were quite complex, with two significant interactions between curriculum of subjects and labels. The results of both main effects and simple main effects indicated that the child labeled gifted was rated more positively than the child labeled normal on three categories: attitudes toward task, attitudes toward own performance, and verbalizations. When child 3 was labeled retarded, his performance was rated less positively than when he was labeled normal on motor reactions.

Undergraduate subjects preparing to become teachers attended to and comprehended the experimentally induced stereotypes of gifted, normal, and retarded as indicated by the results of the stereotype ratings. However, when faced with the performance of normal children, they selectively retained portions of the stereotype, discarding some components of the label in light of conflicting perceptions.

Labels had a selective rather than pervasive effect. A child's rating on all subtests was not consistently affected by either a positive or a negative stereotype. Rather, some combination of label and subtest produced one type of an effect for one child but an altogether different effect for another child. Some labels were more believable for one child than for another. In the face of conflicting behavior, the crucial requirement of retaining the expectancy was not consistently met by the subjects.

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Attitudes of Young Gifted Boys and Girls Toward Handicapped Individuals

Alfred L. Lazar/Russel E. Orpet/Virgil A. Revie

What is the relationship between attitudes toward disability as measured by the *Attitude Toward Disabled Persons Scale* (ATDP) and the sex of the respondent? Yuker, Block, and Youngg (1966) reviewed 13 studies using the ATDP and sex as variables for investigation. They reported that only 7 of the 13 studies cited had any significant differences between sexes: 5 studies favored higher girl ATDP scores, thereby indicating girls to be more accepting or tolerant of the disabled than boys. In a more recent study, Lazar, Orpet, and Fogg (1971) using the ATDP with a sample of 100 college men and 100 college women again found a significant difference favoring the women, thus supporting the 5 studies reporting differences. However, it appears that research on this subject is inconclusive at this time.

This study investigated whether or not there was a difference between young gifted boys and girls in their attitudes toward handicapped persons as measured by the ATDP. In addition, the data of this study would be compared with normative data cited by Yuker, et al. (1966) as to mean ATDP scores for nondisabled samples.

Method

The subjects were 15 boys and 15 girls matched for CA and IQ who were attending summer workshop classes for gifted children being held on a college campus. The boys had a mean CA of 8.5, the girls 8.4, with ranges of 8.1 to 8.7, and 8.0 to 8.8 respectively. The boys had a mean IQ of 140.1, the girls 136.7, with ranges of 129 to 163 and 126 to 150 respectively. Mean ATDP scores for the boys was 72.13 and

the girls 79.86.

The ATDP Form-0 as modified by Lazar, Gensley, and Orpet (1971) was used. This scale consists of 20 items, each having a 6 point scale. (For detailed information on instrument, see Yuker, Block, & Youngg, 1966.) Each of the 20 statements suggest that disabled persons are either the same as or different from nondisabled persons. The possible range of scores can be from 0 to 120, with the high score reflecting the maximum possible positive attitude.

The ATDP was administered by the senior author as a group test to subjects on the first day of the workshop. Data on subjects regarding CA and IQ were provided to the investigators by the workshop teachers with the data being taken from student cumulative records. All instructions and test items were read to the subjects during the administration of the instrument, while the students read the same in silence. Total administrative time took 30 minutes.

Results

A one-way analysis of variance was made to ascertain if there was a difference between the two groups on IQ. No significant difference was found, thus supporting the assumption that the two groups were comparably matched for IQ ($F=.915$, df 1,28, $p > .05$).

In another one-way analysis of variance treatment of sex and ATDP scores a significant difference was found between the boys and girls at the .05 level of significance. Results are shown in Table 1.

Discussion

The sex difference finding of this study supports five other studies which found a sex difference when using the ATDP, the difference favoring the girls as more ac-

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TABLE 1
Analysis of Variance ATDP and Sex

Source of variation	SS	df	MS	F	p
Sex differences	448.53	1	448.53	6.661	<.05*
Within groups	1,885.47	28			
* .05 1, 28 df = 4.20					

cepting or tolerant. The limited sample size of this study would caution against any generalizations about young gifted children responses per se. Furthermore, there is the possibility that a sex bias exists in the ATDP itself. Perhaps girls are more willing to express stronger opinions because they get into less trouble for doing so.

In comparing data from this study with that provided by the authors of the ATDP for nondisabled samples, an examination of Table 2 will reveal that young gifted boys closely approximated their normative counterparts, whereas the young gifted girls scored higher than their counterparts, but not significantly so. However, a direction change is indicated.

Further research using the ATDP and other similiar instruments together is recommended for further research effort by those interested in studying the attitudes of different groups toward handicapped individuals.

TABLE 2
Comparison of ATDP Scores and Sex from Normative Data Cited by Authors of ATDP and this Study

Source of data	Sex	N	ATDP mean score
Yuker, Block, & Youngg (1966)	M	1,689	72.80
	F	1,410	75.42
Lazar, Orpet, & Revie (1971)	M	15	72.13
	F	15	79.86

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Changing Attitudes of Young Mentally Gifted Children Toward Handicapped Persons

Alfred L. Lazar / Juliana T. Gensley /
Russel E. Orpet

The study of attitudes toward disability and handicapped individuals has received considerable attention from psychologists, physicians, and rehabilitation personnel over the past several decades. Yuker, Block, and Youngg (1966) present one of the most comprehensive reviews of the literature involving attitudes of both nondisabled and disabled persons toward disability and handicapped persons. Their focus of research has been with the Attitudes Toward Disabled Persons (ATDP) scale which they developed. The ATDP is reported to measure attitudes toward disabled persons in general. A relatively low score on the ATDP indicates that the respondent perceives disabled persons as different from physically normal persons, whereas a high score indicates that the respondent perceives disabled persons as being not very different from nondisabled persons. While numerous studies have been made using the ATDP, a review of them fails to reveal any that used either a very young sample group or a gifted group.

Yuker, Block, and Campbell (1960) found that vicarious experience with the disabled was positively correlated with the ATDP scale. In contrast, Bell (1962) reported no relationship between scores on the ATDP and years of professional experience in rehabilitating the disabled. Siller and Chipman (1964) similarly found little relationship between experience with the disabled and ATDP scores among high

school and college students. And recently, Wilson and Alcorn (1969) using a pre-post design failed to find any differences on ATDP scores in an attempt to discover if there is a relationship between simulation of a disabling condition for an 8 hour period and changes in attitude toward disability. Shaw and Wright (1967) in their massive study of scales for the measurement of attitudes indicate that the ATDP had better supporting data than most scales and despite some question concerning its validity, the scale was adequate for research purposes.

Purpose

The purpose of this study was to determine if the attitudes of a group of young, mentally gifted children could be influenced in terms of greater understanding and acceptance of handicapped persons as the result of a special instructional program presented by their workshop teacher. Furthermore, it investigated whether the ATDP scale would be able to detect any shift in attitudes as the result of the special instructional program.

Method

Subjects. Two groups of young mentally gifted children matched for IQ and CA were selected for the study. WISC or Binet scores were used to ascertain the IQ level of the youngsters. This data was provided the investigator by the teachers from student records. One group ($N=23$) and their teacher were designated as the experimental group to receive a special instructional

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program developed by the teacher. The control group ($N=21$) and their teacher had no discussions on the handicapped. Both groups were administered a pre- and post-ATDP scale on the first and last day of a 4 week special workshop for gifted youngsters conducted on a college campus.

In Table 1, data about the nature of the two groups are provided regarding number of subjects per group and by sex, and the means and ranges for CA and IQ. It can be readily seen that for both groups there were more boys than girls, with a nearly 2 to 1 ratio in the experimental group and almost a 4 to 1 ratio in the control group. As a group, the control group was about 3 months younger, with both groups having a CA range of 5 months. One possible explanation for the higher mean IQ for the experimental group is that there were two extreme scores which exceed the upper range of the control group.

Procedure. The ATDP (Attitude Toward Disabled Persons Scale, Form O) was administered to both groups by the senior author on the first and last day of the 4 week workshop. During the administration of the test for the first time to both groups, the examiner received questions concerning the meaning and applicability of specific statements; this was also repeated with certain control group members during the final testing. Falty (1965) criticized the ATDP in terms of the fact that the terminology of some of the items was somewhat complex for a number of respondents in his study. Falty's study was conducted in Costa Rica and involved a language factor, whereas the age of the gifted group in this study might have involved a maturity factor.

Special instructional program. The teacher of the experimental group prepared a special unit on creative Americans. These Americans were from every walk of life. Some were handicapped (e.g., Thomas A. Edison, hearing impaired; Helen Keller,

multiply handicapped; Franklin D. Roosevelt, polio victim). A different creative American was studied each day with emphasis on his creative achievements. Personal characteristics, including handicaps, were treated as incidentals but not of major importance.

Each week special guests were invited to the class to tell the children about their work. One was a teacher of educable mentally retarded children. She brought pictures of her class in various learning activities. The children in the experimental group made many interesting comments, such as "They look just like us."

Other visitors were a family in which the parents were deaf but their young child had normal hearing ability. The experimental group had practiced the manual alphabet before the family came, so they had a method of communication.

A young teenage girl and her boyfriend told the group about their work as aides in a convalescent hospital. After a very interesting conversation with the class, they revealed that they both were epileptics, but because of medication they had not had seizures for 2 or 3 years.

One of the counselors in the laboratory school visited and spoke to the class about her hidden handicap. She told them that she was legally blind.

Comments from the children were recorded by the teacher to assess in a subjective manner how these experiences influenced them and may have changed their attitudes. One girl said, "When I heard that deaf people were coming, I was scared, but I'm not any more. They are real people." A boy decided that he wanted to be a doctor who would help handicapped children. Other boys related how they visited a class at a school for mentally retarded children and talked to them. A parent who worked with trainable mentally retarded children said that her gifted child in the experimental group had

TABLE 1
Size, Sex, CA and IQ Means and Ranges of the Gifted Group

Group	N	Sex		CA		IQ	
		Boys	Girls	Mean	Range	Mean	Range
Experimental	23	15	8	8-6	8-3-8-8	140.5	126-163
Control	21	17	4	8-3	8-0-8-5	134.3	123-146

become very interested in the mother's work and asked many questions about the children.

Results

Means, standard deviations, and correlated mean *t* test values were determined for the pre-ATDP and post-ATDP scores. These are reported in Table 2. The table shows that a statistically significant difference ($p < .05$) was found between the experimental and control groups' ATDP scores.

TABLE 2
Means, Standard Deviations, and *t* Values for Scores on the Attitudes Toward Disabled Persons Scale (ATDP)

Group	Pre-ATDP	Post-ATDP	<i>t</i>
Experimental (<i>N</i> = 23)			
Mean	73.70	79.50	1.91*
SD	6.80	13.73	
Control (<i>N</i> = 21)			
Mean	81.70	79.00	-1.07
SD	8.93	11.79	

* $p < .05$ (one-tail *t* test).

Conclusions

It appears that the special instructional program used by the teacher with the experimental group had some influence in changing the attitudes of these young gifted children toward handicapped individuals. Does it mean that the ATDP can be used by teachers in measuring their instructional effectiveness in the affective domain? To some degree yes, if one desires to measure change toward greater acceptance and understanding of the handicapped.

This was the first time that the ATDP has been used with such young children. It

would be of interest to conduct future research on the ATDP with children of normal intellectual range as well as with the mentally retarded. The ATDP scale should prove of value and interest to special educators conducting similar types of studies involving attitudes of both the nonhandicapped and handicapped.

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Cognitive and Affective Patterns of Emphasis in Gifted and Average Illinois Classes

Joe Milan Steele/Ernest R. House/
Stephen D. Lapan/Thomas Kerins

As part of a large scale evaluation of the state gifted program in Illinois, the systematic processing of low inference student judgments about their classes was used to describe and evaluate classroom transactions. The purpose of this study was to determine (a) what cognitive and affective emphases exist in the classroom, and (b) what patterns differentiate "gifted" and "average" classes.

The measure used was a specially developed instrument, the Class Activities Questionnaire. Students are asked to agree or disagree with statements describing the class, e.g. "Restating ideas in your own words is a central concern in your class." Each item is paired with another item to comprise a factor; sixteen factors yield a profile of a class.

Seven cognitive factors are derived from Bloom's (1956) taxonomy: memory, translation, interpretation, application, analysis, synthesis, and evaluation. There are also nine noncognitive factors: discussion opportunity, test/grade stress, stress on lecture, enthusiasm, independence, divergence, humor, estimate of teacher talk, and estimate of homework. Two factors, memory and divergence, are not adequately assessed by the instrument. Emphasis on memory tends to be underestimated, emphasis on divergence overestimated. See Steele, House, Lapan, and Kerins (1970) for reliability estimates and instrument analysis. By summing the class means on

clusters of items, it is possible to derive four subscores: lower thought processes, higher thought processes, classroom focus, and classroom climate. (See Table 1.)

Subjects

The sample used for this study consisted of 131 Illinois classes in language arts, science, math, and social studies, grades 6 to 12; 3,138 students completed the CAQ. One group of 62 classes were "gifted" classes representative of all programs supported by the Illinois Plan for the Gifted. A group of 69 "average" classes was selected as a comparison group with care not to include any below average classes. The average sample was drawn from three Chicago suburban districts—mainly Caucasian, middle class, socioeconomically average—and does not purport to be representative of all classes in the state.

Results

Using the four dimensions of the CAQ an analysis of variance was run comparing the two samples on each dimension. No significant difference was found for lower thought processes ($F = 2.97$) but differences at the .01 significance level were found between groups on higher thought processes ($F = 47.0$), classroom focus ($F = 41.0$), and classroom climate ($F = 39.5$). Followup t tests indicate that the gifted classes were superior to the average classes on every dimension except lower thought processes. The prototypical patterns of emphasis on cognitive and affective factors of the CAQ are shown in Table 1. Only those factors which were seen as emphasized by at least 25 percent of the classes in a group are considered to characterize the group; lower percentages are not shown.

Conclusions

In a representative sample of programs for the gifted in Illinois, classes were shown to be superior in several dimensions to a comparison group of suburban classes chosen to compare favorably with the

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From *Exceptional Children*, Summer 1971, pp. 757-759. Copyright © 1971 The Council for Exceptional Children.

gifted group socioeconomically. The gifted classes were shown to have a broader scope of cognitive emphasis, to emphasize higher

thought processes, have more opportunity for discussion, less teacher domination, and more enthusiastic students.

TABLE 1
Prototypical Patterns of Instructional Climate in Samples of Average and Gifted Illinois Classes

Major Dimensions	Class Activities Questionnaire Specific Factors	Percent of Classes in Each Group Emphasizing Each Level	
		Average Classes (N = 69)	Gifted Classes (N = 62)
Lower thought processes	Memory ^a	—	—
	Translation	39	52
	Interpretation	30	74
Higher thought processes	Application	—	52
	Analysis	58	81
	Synthesis	—	40
	Evaluation	—	31
Classroom focus	Discussion	30	89
	Test/grade stress	25	—
	Lecture	28	—
Classroom climate	Enthusiasm	—	68
	(Lack of)	(51)	—
	Independence	28	76
	Divergence ^b	69	97
	Humor	78	89
	Low teacher talk (10-40%)	—	29
	(High talk: 75-90%)	(55)	—
	Preparation for class	—	—
	Less than 1 hour	—	—
	1-2 hours	67	44
	More than 2 hours	23	37

^a Underestimate due to weakness in instrument.

^b Overestimate due to weakness in instrument.

Differences between average and gifted classes found in these samples are as follows:

Average Classes

1. Most classes emphasize few (2 or less) thought processes.
2. Most classes emphasize only one (if any) of the higher thought processes.
3. As a group, average classes emphasize 3 of the 7 levels of thinking.
4. A high amount of teacher talk occurs.
5. Classes have little opportunity for or involvement in discussion.
6. Test/grade stress is characteristic of average classes as a group.
7. There is an absence of enthusiasm in a majority of the classes.
8. There is little opportunity for independence.
9. The focus is on the teacher as information giver with a passive role for students.

Gifted Classes

1. Most classes emphasize many (3 or more) thought processes.
2. Most classes emphasize two or more of the higher thought processes.
3. As a group, gifted classes emphasize 6 of the 7 levels of thinking.
4. A moderate amount of teacher talk occurs.
5. Classes have much opportunity for and involvement in discussion.
6. Test/grade stress is not characteristic of gifted classes as a group.
7. The presence of enthusiasm characterizes almost all classes.
8. There is much opportunity for independence.
9. The focus is on the student taking an active role in the class.

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Do Gifted Children Speak an Intellectual Dialect?

Julie M. Jensen

With the possible exception of a growing body of literature related to able readers and creative expression, the language of the gifted child has received little attention. This neglect is perplexing when one considers the relationship between language and intellectual performance, as well as the demands placed by society on an individual's ability to express concepts symbolically through language.

A wealth of research within the past decade has focused on the interaction of language and social class and has detailed the problems which ensue when teachers and pupils are ignorant of each others' patterns of communication. The research described here, however, investigated the relationship of language performance to intellectual, rather than sociological, factors. With the ultimate objective of providing a base for recommendations related to aspects of language arts curricula for superior intermediate grade pupils, the study was designed to test the following hypothesis: There is no difference between average and superior fifth grade boys and girls in casual and careful oral language fluency, grammatical control, and function.

Language quantity, lexical diversity, lexical uniqueness, and freedom from mazes served as measures of fluency. Grammatical control was defined by structural complexity measures, the occurrence and frequency of basic syntactic patterns, and mastery of standard English usage. The categories of expressing tentativeness, questioning, issuing commands, disagreeing, and relating personal experiences were applied to an exploratory examination of language function.

Method

A two stage sampling procedure enabled a comparison of intellectual levels and sexes. Stage one randomly selected one school from each of five socioeconomic strata specified by the Minneapolis Public Schools. Sample eligibility was defined for the "average" subgroup as having scored between the 40th and 60th percentiles on an average of the *Lorge-Thorndike Intelligence Tests: Verbal* and on both the vocabulary and comprehension subtests of the *Gates-MacGinitie Reading Tests*. "Superior" was defined as exceeding the 80th percentile on an average of the same three scores. Grade level, instrumentation, and eligibility ranges were dictated by policies existing within the participating school system. Stage two sampling procedures randomly selected and paired 20 average boys, 20 average girls, 20 superior boys, and 20 superior girls, fixing the sample size at 80 fifth grade pupils.

A common content vehicle was used to elicit two broad speech styles from each subject. A casual style was assumed to occur between peers who were left alone in a bugged room with a problem to solve. Careful speech was simulated during standardized individual interviews with the investigator.

Language segments of 100 words from unpunctuated typescripts were analyzed through word counts, a lexical variety ratio, word frequency lists, communication units, a subordination ratio, sentence pattern classes, and nonstandard usage and function categories. Analysis of variance was used to ascertain the relationships between the language features studied and ability, sex, and language style.

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Results and Discussion

Significant differences occurred on 38 of 147 comparisons. Language style most frequently differentiated performance on a given variable, further substantiating the notion that language is modified according to the context in which it occurs. Increasing the formality of the language setting failed to enhance the effectiveness of expression, as indicated by large numbers of mazes and nonstandard usages. Findings related to sex were mixed and did not support the widely held belief that linguistic expectations for girls should typically exceed those for boys.

The four fluency measures taken together revealed a superiority of the high ability subgroup. Though this superiority was consistent, it was statistically significant at the .05 level only on the measure of lexical uniqueness. Superior subjects spoke a larger number of words in both language styles, displayed more diversified vocabularies, and exhibited a lower incidence of language mazes.

Grammatical control findings also indicated a consistent superiority of the high ability subgroup. Average subjects spoke in significantly shorter communication units and clauses than did superior subjects. A lower incidence of subordination, less variation in structural patterning, and a higher incidence of nonstandard usages typified the speech of average subjects.

The exploratory study of the functions for which language was used produced interesting tendencies. Tentative statements occurred with greater frequency on the typescripts of high ability subjects. Pupils with average ability issued commands and expressed disagreement with peers to a significantly greater extent than

did their superior counterparts. Finally, the task orientation of average subjects more often rested upon personal experiences, perceptions, and preferences which were related or unrelated to the specified content, rather than upon general, scientific, or practical concerns which tended to characterize the conversations of high ability subjects.

Limitations of the study lay in the operational definitions for the ability levels, the quantity of language analyzed, and validity considerations related to creating and comparing varying speech contexts.

Conclusions and Implications

The following conclusions appear justified: (a) All of the basic structural patterns of English occurred within the typescripts of both ability subgroups, with the usage pattern of the subjects closely paralleling that of adults. (b) Standard English usage, with few exceptions, characterized the speech of both ability subgroups. (c) The language differential between students who performed in the top and middle ranges on standardized tests of intelligence and achievement was not statistically significant on most comparisons.

Selected implications of the study relate to the formal teaching of grammar and usage, differential sex expectations in oral language performance, teacher preparation in individually diagnosed and prescribed language arts instruction, and the usefulness of the general label of *gifted*.

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RONALD H. FREDRICKSON
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Statewide Implementation of Classroom Practices for Superior Students

Abstract: 40 matched secondary school faculties were compared on implementation of recommended classroom practices for high performing students. A total of 20 experimental faculties had taken part in a statewide inservice program on guidance and education of gifted students. The remaining 20 control schools had not. Practices counted were cross validated. Experimental teachers used more within classroom activities for enrichment; control teachers used more out of classroom activities. The study indicated that beginning teachers need special aid. When inservice training focused on specific classroom practices, the results were the most successful.

THE classroom teacher's utilization of enrichment practices for superior students has been frequently encouraged but rarely studied. The value of such practices as rapid advancement, acceleration, and ability sectioning has often been assumed but has seldom been evaluated, other than by asking teachers to express their opinions in surveys. Little is known about the kinds of classroom activities that are actually used to enhance the education of superior students, nor about the effectiveness of inservice programs concerned with classroom activities for the high performer.

The purpose of this study was to ascertain what teachers did for superior high school students after they had taken part in an inservice program over a period of years. The quantity and kind of classroom practices used by teachers in 20 high schools who had participated in the inservice programs of the Research and Guidance Laboratory for Superior Students at the University of Wisconsin (Rothney, 1961) were compared with those used by teachers in 20 similar high schools who had not been in the laboratory program.

The Research and Guidance Laboratory for Superior Students was founded in 1957 for the purpose of conducting research in the identification and guidance of superior high school students. At the time this study was conducted, 91 public high schools in Wisconsin were cooperating with the Laboratory. Schools which participated in the work selected ninth grade students whom they considered to be the most superior performers. The number of students selected depended upon the size of the school population. School faculties were free to identify their superior students in any manner they wished, but they generally used 15 criteria supplied by the Laboratory. The selected students were sent to the Laboratory for counseling and testing each year during their four years of senior high school. During each visit they were counseled and tested and their written and oral performances were analyzed. After each visit to the Laboratory, reports of individual students were sent to the cooperating schools, and members of the staff visited the communities each year to interview the parents. Laboratory staff also attended annual

From *Exceptional Children*, October 1968, pp. 135-140. Copyright © 1968 The Council for Exceptional Children.

faculty meetings at the schools during which the performances of the selected superior students were discussed and general consideration was given to methods of enriching programs for superior students.

One of the objectives of the Laboratory is to stimulate the development and use of classroom practices that might be employed by teachers in educating superior students. It was hoped that the teachers who discussed these practices with the staff during the annual meeting at the high school and who had read the individual reports would try the practices with their superior students in their classrooms.

Not all the practices suggested were unique to the Laboratory. They could be found in professional books and articles (Applebaum, 1959; National Education Association, 1961) equally available to all teachers whether they participated in the laboratory program or not, but they had not been illustrated with applications to particular students as was done in this study.

Subjects

Forty nonmetropolitan four year high schools in the state of Wisconsin with enrollments ranging from 122 to 942 (average 472) participated in the study. One group of 20 schools had joined in the program of the Research and Guidance Laboratory for Superior Students for at least three but not more than five years. The second group of 20 schools had not participated at all. The schools in the latter group were selected from a larger number of schools on the basis of their similarity—except for participation in the Laboratory—to the first group.

In order to obtain the two similar groups, each of the 20 laboratory high schools was matched with a nonlaboratory school, on the basis of nine conditions which might affect the kind and quantity of practices implemented by the teachers in these schools. Data for these conditions were obtained from the schools' annual reports to the Wisconsin State Department of Public Instruction. The nine variables were (a) equalized valuation, (b) annual per student cost of education, (c) population of the community, (d) high school

student enrollment, (e) number of teachers in each school, (f) length of total teaching experience, (g) teaching experience within the local school, (h) number of masters degrees held by teachers, and (i) school district classification used by the State Department of Public Instruction. After 20 pairs of schools had been selected by using the nine variables, the names of the pairs were submitted to six supervisors in the State Department of Public Instruction for evaluation of their similarity. They were asked to consider factors other than those used initially by the researchers, such as rural urban nature of school enrollment, socioeconomic level of the community, geographical location, and the quality of the physical plant. When pairs were not considered alike by the supervisors despite their initial similarity on the nine variables, new pairings were obtained that conformed to the ratings of the supervisors and the initial nine criteria. It should be noted that matching was done only to obtain two similar groups. After the initial matching, schools were not considered pairs.

Procedure

After a personal visit by the researchers to each of the 40 faculties to explain the study, an inventory report was placed in each teacher's mailbox. This was done at the end of the first semester with a request that it be returned quickly. A self addressed stamped envelope was attached to the inventories so that each teacher could mail them directly to the investigator. Eighty-seven percent (272 of the 313 teachers in the laboratory schools) and 94 percent (286 of the 306 nonlaboratory teachers) returned them. The number of usable inventories was 459—233 laboratory and 226 nonlaboratory teachers. Inventories upon which no students had been named were excluded.

In the inventory report each teacher in each of the 40 schools was asked to identify from one to five high school students whom he considered to be superior performers in the areas in which he taught. For identification purposes teachers were given the laboratory list of suggestions for selection of superior students. If they could identify no su-

perior students, they were to indicate that fact. After each teacher had named his students, he was asked to indicate which of 25 recommended practices he had used for each superior student he had named.

Following receipt of the teacher reports, the students who had been selected as superior performers by their teachers were asked to indicate, on a student inventory containing the same list of 25 recommended practices, those practices they had experienced. They were also asked to describe and comment. (The teachers had been informed that the students they had named were to be questioned in order to obtain their points of view.) The student responses were used in cross validation of the data. Only if a particular practice had been listed independently by both teacher and student was it counted as having occurred.

All teachers in each high school were asked to participate in the initial steps in the study, but only the reports of the English, social studies, mathematics, science, and foreign language teachers were used in the detailed analyses reported here. These areas were selected because (a) they represented a major portion of the faculties (619 of 1,053 total teachers); (b) nearly all of the students selected (1,242) were in the classrooms of these teachers; and (c) the recommended practices in the inventory appeared, at least in terminology, more applicable to these subject fields.

Results

Differences between practices of laboratory and nonlaboratory teachers. *T* tests on differences between the laboratory and nonlaboratory teachers' usage of 25 recommended classroom practices were calculated. Significant differences at the .05 level indicated that (a) laboratory English teachers provided more enriched reading, (b) a greater number of mathematics teachers in the laboratory schools had urged the students to take more advanced subjects, and (c) more of the language teachers in the laboratory schools had their students take part in small group research projects. Significantly more nonlaboratory social studies teachers encouraged their students to take part in school social, civic,

and community activities, and more science teachers encouraged participation in summer schools, enrichment programs, institutes, clinics, camps, or similar experiences.

When the totals of all laboratory teachers were compared with the totals of all of the nonlaboratory teachers on all of the 25 practices, no significant differences were found. In Table 1 it can be seen that 15 *t* ratios favored the laboratory teachers and 10 *t* ratios favored the nonlaboratory teachers.

School size and verified practices. The 40 schools participating in the study ranged in enrollment from 122 to 942. A *t* test showed no significant differences in use of the inventoried practices between the laboratory and the nonlaboratory schools by size of school enrollment. The mean number of the student verified practices of all schools, except for the second smallest group of five 200 student enrollment intervals (from 0 to 999), were in favor of the laboratory group. None was significant enough to eliminate the possibility of a chance difference.

Teaching experience and verified classroom practices. Analyses of differences that appeared between teachers of various levels of experience are shown in Table 2. No significant difference between practices of laboratory and nonlaboratory teachers with similar lengths of teaching experience appeared. Significant differences were apparent, however, between teachers who had different years of experience when both laboratory and nonlaboratory teachers were combined. The optimum experience for use of special classroom practices seemed to be between 11 and 20 years.

Conclusions

1. Total differences in the number of verified practices between the laboratory and nonlaboratory teachers were not significant. The evidence did not provide enough support to reject the null hypothesis that there were no significant differences between the two groups of teachers in the kinds and quantities of practices utilized. From an analysis of the data by subject area, a general pattern emerged. The laboratory

TABLE 1

Comparison between Laboratory and Nonlaboratory English, Social Studies, Mathematics, Science, and Foreign Language Teachers on the Use of 25 Verified Classroom Practices

Practices used or encouraged	Laboratory teachers (N = 233)		Nonlaboratory teachers (N = 226)		t ratio
	N	$\bar{X}$	N	$\bar{X}$	
1. Enriched reading	87	0.37	68	0.31	0.94
2. Group research	96	0.41	81	0.36	0.62
3. Individual research	123	0.53	106	0.47	0.77
4. Interdepartmental research papers	49	0.21	48	0.21	0.07
5. "Creative" work	133	0.57	122	0.55	0.26
6. Advanced materials	116	0.50	97	0.44	0.83
7. Grouping within classroom	52	0.22	46	0.21	0.27
8. Special advanced problems	27	0.12	20	0.09	0.80
9. Note taking instruction	63	0.27	81	0.36	-1.21
10. Summer programs	38	0.16	56	0.25	-1.62
11. Further development in an area	103	0.44	104	0.47	-0.35
12. Students to help other students	86	0.36	85	0.38	-0.17
13. Correspondence courses	7	0.03	11	0.05	-0.76
14. Election of advanced subjects	55	0.24	32	0.15	1.48
15. Advanced assignments	59	0.25	61	0.27	-0.34
16. Scheduling of five or more academics	66	0.28	53	0.24	0.72
17. Early graduation	1	0.00	0	0.00	0.98
18. Special help when needed	98	0.42	68	0.30	1.79
19. Student commendation	294	1.26	300	1.34	-0.69
20. Writing for information	49	0.21	48	0.22	-0.09
21. Vocational interviews	6	0.03	4	0.02	0.57
22. Taking competitive tests	93	0.40	122	0.55	-1.76
23. Participation in school activities	306	1.31	243	1.08	1.75
24. Work with student in activities	124	0.53	97	0.43	1.19
25. Social and civic activities	54	0.23	77	0.34	-1.75
Totals	2,185		2,030		

Note:—N's exceed number of applicable teachers in each column since a teacher could have listed more than one superior student and could have had the practice verified.

TABLE 2

Comparison of Laboratory and Nonlaboratory Teachers by Years of Total Teaching Experience and Total Number of Verified Classroom Practices

Total teaching experience in years	Laboratory			Nonlaboratory			Total		
	Teachers Practices			Teachers Practices			Teachers Practices		
	N	N	$\bar{X}$	N	N	$\bar{X}$	N	N	$\bar{X}$
Less than 1	30	233	7.8	34	208	6.1	64	441	6.9
1- 2	47	467	10.0	41	302	7.4	88	769	8.7
3- 5	59	495	8.4	47	482	10.3	106	977	9.2
6-10	46	528	11.5	38	399	10.5	84	927	11.0
11-20	27	386	14.3	31	381	12.3	58	767	13.2
More than 20	21	214	10.1	26	329	12.7	47	543	11.6
Total	230	2,323	10.1	217	2,101	9.7	447	4,424	9.9

teachers practiced significantly more activities dealing with enrichment within the academic classroom, while the nonlaboratory teachers utilized more activities outside the classroom.

2. No differences in use of special classroom practices were found when the two groups were compared on the basis of school size and total years of teaching experience, but differences in practices between teachers in terms of total teaching experience were significant. While there were individual exceptions, the more experienced teachers used a larger number of the practices named on the inventory, and their reports were verified by their students. Teachers with six to ten years, and teachers with 21 or more years of teaching experience, used significantly more practices with their outstanding students than either beginning teachers or those with only one or two years of experience. Teachers with 11 to 20 years of experience appeared more active in implementation of classroom practices than did teachers with other lengths of experience.
3. Despite research evidence favoring acceleration for certain individual students, only one verified incident of encouragement of early high school graduation was reported. Thirteen teachers made favorable but qualified comments about this practice. The remaining teachers either left the item blank or indicated their opposition to the practice.

Discussion and Implications

The findings of this investigation indicated that participation in the inservice program provided by the Laboratory did not result in significantly greater use of the practices. It appeared that the encouragement of the use of special practices by illustrating how these practices would serve the needs of particular students in the teachers' own classes had not been highly effective.

The nature of the practices upon which the two groups of teachers differed significantly by subject area seems, however, to have implications for the direction of change or intensification needed for an inservice pro-

gram. The laboratory staff had made concentrated efforts to encourage enriched reading, the taking of advanced subjects, and the utilization of group research. Since these efforts were in the areas in which the greatest differences appeared, there seemed to be a direct relationship between this special emphasis and the implementation of the related practices.

It appears that if the laboratory inservice program is to be more effective in obtaining greater differences between laboratory and nonlaboratory schools in implementing classroom practices for high performing students, then more specific suggestions for individual students may be required. Perhaps a specifically prepared kit or unit including the necessary books, periodicals, classroom materials, application forms, and supporting references with recommended practices prepared by the laboratory staff could accompany each student report. Other suggestions might include the following: (a) a subject matter expert in a field of the student's interest could make suggestions for classroom practices; (b) mail followup procedures with teacher and student could be initiated on suggestions made; and (c) a copy of the recommended classroom practices could be sent to the student and parent who may anticipate and be receptive to implementation of the suggestions in the classroom. More feedback on the problems in implementing these individualized classroom practices might also be of value to the laboratory personnel.

The differences between beginning and experienced teachers suggest implications for inservice workers concerned with special methods for enhancing the education of outstanding students. In order for beginning teachers to use more of the recommended practices, special inservice training may need to be designed particularly for them. This special need was expressed in a representative comment by a beginning teacher: "I haven't had a chance to do many of these practices. I'm still too busy learning how to teach."

The fact that classroom teachers are using many recommended procedures with large numbers of students (see Table 1) should be noted by all those concerned with the edu-

cation of superior students. There is evidence offered by teachers and verified by their pupils that students recognized as outstanding are being given special attention.

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Varieties of Adolescent Creativity and the High School Environment

Abstract: To test the hypothesis that creativity is associated with social alienation, self reported creativity in the visual arts, science, performing arts, music, and writing (with the criterion of prize and award winning) and in group leadership was predicted from biographical questionnaire items and intelligence, using simple, multiple, and canonical correlations. The analyses, conducted on national random samples of 2,225 boys and 741 girls, directly contradicted the hypothesis by suggesting that adolescent creativity is associated, although weakly, with (a) involvement in school activities, (b) stimulating home environments, (c) perseverance in spite of difficulties, and (d) intellectual motivation but not intelligence.

IN the cave analogy Plato describes the world of ordinary sense perception and knowing:

Behold! Human beings living in an underground den . . . like ourselves. . . . They see only their shadows, or the shadows of one another, which the fire throws on the opposite wall of the cave [Plato, 1888 translation].

As the analogy unravels, one man (the Philosopher, of course) is able to ascend to the sunlight outside the cave. He is temporarily blinded by the intensity of the light and returns to the cave only to realize the dimness of the images cast on the wall. When he tries to share his discovery with the others, they attack and persecute him. The sequence of elements in Plato's analogy—encapsulated society, withdrawal of the solitary discoverer, inspiration, return, and persecution—would seem to have a universal quality, for by its very nature creative work opposes, at least partially, the ideas and norms of established society.

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American Culture: Conformity and Individualism

Several modern social commentators continue the Platonic antithesis of the withdrawn, marginal discoverer alienated from the mainstreams of homogenized, conformist culture; examples are Veblen (1954) in *Theory of the Leisure Class*, Riesman, Denney, and Glazer (1960) in *Lonely Crowd*, Whyte (1956) in *Organization Man*, and Wheelis (1958) in *Quest for Identity*. In the tradition of Rousseau, Henry (1963) in *Culture Against Man* and Jackson (1968) in *Life in Classrooms* have applied a similar analysis to schooling and portray classrooms as settings for transforming the natural creativity of the child to group conformity and compliance with adult standards. Perhaps these tendencies of the school are related to anti-intellectualism in contemporary culture and more particularly "the adolescent subculture"; Coleman's (1960) study of high school students clearly revealed the boys' preoccupations with athletics and cars and the girls' concerns about personal grooming and dating, in both cases apparently at the expense of creativity and the life of mind.

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On the other hand, exploratory research (Walberg, 1969a) has shown that creative adolescents, identified by prize and award winning in the arts and sciences, seem happily integrated into the social hierarchy of the school. In contrast to other students, both artist and scientist groups more often describe themselves as friendly, outgoing, and self confident; moreover, they like school and apply themselves to their studies. Thus, the purpose of the present research is an attempt to replicate these findings on a large national sample of high school students. In addition, two related questions are taken up: To what extent is award winning predicted by measured intelligence? What are the similarities and differences between those winning distinction in six areas—leadership, visual arts, music, performing arts, writing, and science?

Sample and Method

In connection with the evaluation of Harvard Project Physics, a number of tests and questionnaires were given in the

classes of a national sample of 75 physics teachers. From the 300 self report items on one instrument, the Biographical Inventory (Taylor & Ellison, 1967), 12 were selected for analysis which had effectively distinguished arts and sciences prize winners and other students (Walberg, 1969a). The biographical items contain four or five options generally on an ascending scale—for example: "How do you feel about school? (a) Like it very much, (b) Like it most of the time," and so on. The responses to these items were dichotomized at the approximate medians so that about half the group attained the criterion and half did not. The gist of each item and its criterion are shown in the left column of Table 1. In addition, six 4 and 5 option items were included to establish membership in the creative groups. The categories, item stems, and criterion answer for each were:

1. *Leader*—How often have you been an organizer or group leader? I have been quite active in student government and organizations, or community organiza-

TABLE 1
Correlations of IQ and Biographical Items with Group Membership in Six Areas
for 1,026 Boys and 318 Girls

Characteristics	Leader		Artist		Scientist		Performer		Musician		Writer	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
IQ	.05	.10	-.01	.06	-.01	-.04	-.00	.04	-.03	.06	.05	.02
Books in home (two cases)	.02	.03	.05	.06	.02	.03	.03	-.01	.04	-.02	.06	.10
Outside reading (large part of free time)	.07	.18*	.04	.09	.06	.05	.05	.06	.02	.07	.10*	.07
Serious nonschool study (sometimes)	.00	.00	-.00	.01	.05	.04	.05	-.03	.07	.13	.04	.05
Creative opportunity (some)	.07	.11	.13*	.08	.02	.05	.08*	.16*	.11*	.17*	.08*	.06
Discuss occupation with adult (frequently)	.05	.10	-.01	.03	-.01	.06	.05	.05	.05	-.01	-.02	.10
Like school (most of the time)	.05	-.05	-.00	-.03	.01	.03	.08*	-.03	.01	-.08	.04	-.00
Question teachers (more than average)	.13*	.23*	.04	.08	.07	.08	.02	.10	.01	.15*	.06	-.03
School marks (somewhat above average)	.11*	.15*	.03	.05	.03	.03	.04	.06	.05	-.01	.04	.00
Revise work until best possible (occasionally)	.04	.08	.02	.05	.03	.03	-.01	.05	-.05	-.05	-.02	.09
Following through despite distractions (above average)	.12*	.07	.05	.04	-.01	-.05	.01	.13	-.01	-.03	.01	.03
Importance of intelligence (extreme)	.07	.11	.06	-.01	.04	.07	.02	.09	-.02	.12	.07	.06
Creativity and imagination (above average)	.10*	.18*	.08*	.10	-.00	.06	.07	.16*	.07	.11	.07	.14
Multiple	.20*	.33*	.17*	.17	.12	.17	.15*	.25	.19*	.31*	.16*	.22

* $p < .01$

tions. I have been the prime mover in setting up goals or projects and seeing that they reach completion.

2. *Artist—How interested are you in art (drawing, painting, sculpture, ceramics, architecture, photography)?* A very deep interest in art. I have spent a great deal of time in doing original work that has been exhibited. I have won one or more awards in competition.
3. *Scientist—How interested are you in science?* I have a very strong interest in science. I spend most of my time working on projects or papers. My work has been published or publicly recognized for its contribution to the field.
4. *Performer—How good are you in the performing arts (dancing, acting, etc.)?* I am very active in this area. I performed in both school and community productions. In competition I have won recognition or awards for my performance.
5. *Musician—How good are you in music?* I have a great deal of interest in music. I have entered competition and have

won one or more prizes, either for my own performances or for the production of an original piece of music.

6. *Writer—How good are you at writing (stories, poems, themes, etc.)?* I have a very strong interest in writing. My original work has won one or more prizes in competition and has been published in literary journals other than in my school.

A random half of the total sample had taken the *Henmon-Nelson Tests of Mental Ability*; hence the sample sizes for analyses involving IQ were reduced to 1,026 boys and 318 girls. The Kuder-Richardson Formula 20 reliability of the test is .91 (Lamke, Nelson, & Kelso, 1960).

Results and Discussion

Sex Differences

Figure 1 shows the percentages of the total samples of 2,225 boys and 741 girls who reported affirmatively to the criterion answers in each of the six areas. Probably because there was no award or prize implied in the criterion for leadership, larger

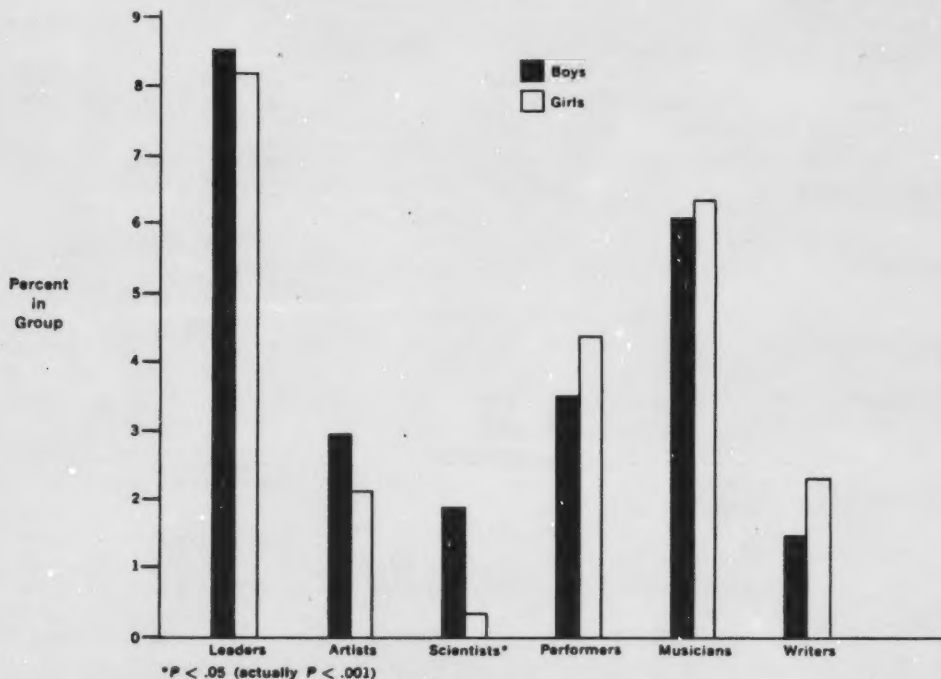


FIGURE 1. Percentages of 2,225 Boys and 741 Girls Attaining Distinction in 6 Areas.

percentages of boys and girls (about 8 percent) were identified in this area. A relatively large percentage of the total group (about 6 percent) had won prizes or awards in music, and relatively few (2 percent or less) had achieved distinction in science and writing. The only significant (binomial $p < .05$) difference in winning between the sexes is in the area of science; compared to boys, few girls have published or received public recognition for their work in science ($p < .001$). (For research on educational and psychological problems of high school girls in science, see Walberg, 1969a, 1969b.)

Intelligence and Creativity

Table 1 contains the simple and multiple correlations between these indices of creativity on one hand and IQ and biographical characteristics on the other. The first row of correlations reveals that in no case is measured intelligence correlated (significant at the .05 level) with membership in the creative groups for either the sample of boys or girls. This lack of relationship confirms prior studies of creativity and intelligence. Chambers (1969), after reviewing research in this area, hypothesized that a minimal level of intellectual ability is essential for creative productivity; but beyond a given "floor," which varies in different fields, there is no relationship between intellectual abilities and creativity. A fairly typical result is that of MacKinnon (1961). He found that a sample of creative architects scored higher on intelligence tests than do undergraduate students. However, when the architects were ordered according to their peer rated creativity, the correlation between intelligence and creativity was found to be non-significant ($-.08$). Based on his own research on creative writers and the work of others, Barron (1961) concluded that there are correlations around $+.4$ between the two variables over the total range of intelligence but that beyond an IQ level of 120, intelligence is a negligible factor in creativity. The mean IQ's for boys and girls in the present sample are 117 and 119, respectively, with standard deviations of 15 and 14. Obviously the group that elects to take physics in high school is generally higher in measured intelligence than

the rest of the high school population. Moreover, the criteria for creativity employed in the present study were not as stringent as those used by Barron and MacKinnon for creative architects and writers, who had won national recognition. Nevertheless, a large part of the total sample in the study may be beyond the minimal levels of mental ability required for winning awards and prizes in adolescent competition—thus explaining the lack of relationship of intelligence and creativity.

Biographical Correlates

The biographical correlates of membership in the creative groups are shown in Table 1. The row of multiple correlations at the bottom shows that the prediction of group membership for boys is statistically significant ($p < .05$) but not very accurate. Perhaps because there are fewer numbers of girls, only the predictions of leaders and musicians in this group can be made with statistical reliability. Of the 144 simple correlations in the table (not counting the IQ correlates), one or two might be expected by chance at the .01 level. However, there are 19 significant at this level, far more than the chance expectation. (It should also be noted that the correlations are extremely attenuated by the relative infrequencies of prize winning.)

Rather than examining the relationship implied by each correlation separately, it is more convenient to discuss the two significant ($p < .05$) overall relationships between biographical characteristics and group membership as identified by canonical analysis (for an explanation of this technique, see Walberg 1969c). First, all six creative groups among the sample of boys are differentiated ($p < .001$) from students who do not achieve distinction. In contrast to other students, the creative groups more often report themselves as more creative and imaginative and have more creative opportunities. They more often like school, get high marks, and question their teachers. Also, they more often think it is important to be intelligent, have at least two cases of books in the home, study and read outside school, and talk to adults about future occupations. Lastly, they more often follow

through work despite difficulties and distractions. The significant pattern of relationships for girls ($p < .01$), though not shown here, highly resembled that of boys just described.

These relationships confirm several findings from prior research and suggest that the creative groups in different fields resemble one another more than they resemble students who have not won distinction. The data from this research and two prior studies (Schaefer & Anastasi, 1968; Walberg, 1969a) and several hypotheses from a multidimensional theory of creativity (Chambers, 1969) converge on several general factors associated with creativity in adolescence. As identified by teacher nominations, creativity test scores, and self reports, creativity is associated with (a) the stimulating qualities of the home, (b) a wide and high level of involvement in both school and outside activities, (c) persistence and single-mindedness in following through activities despite difficulties, and (d) strong intellectual motivation, although not necessarily extremely high levels of ability.

The second differentiation, which distinguishes musicians and performers from leaders and scientists is significant for boys ($p < .05$) but not for girls, and it is much weaker than the pattern of relationships just described. These results are not directly comparable with the two previous studies of biographical differences in creative groups, since Walberg (1969a) contrasted scientists with five groups in the arts and Schaefer and Anastasi (1968) contrasted mathematicians and scientists with visual artists and writers. However, several similarities are worth noting. In the other studies, artists characteristically had more diversified, less concentrated interests and opportunities than scientists; here it can be noted that, in contrast to the other creative groups, performers and musicians tend to do more studying outside of school, to have more creative opportunities, to think less of the importance of intelligence, and to be less persistent. Leaders and scientists, however, seem to concentrate their energies more in school; they are more likely to question teachers, to be persistent, and to think it important to be intelligent. Thus, while all creative

groups share a high degree of involvement in all activities compared to other students, after these differences are considered, scientists and leaders tend to be more involved in academic life than do performers and musicians.

Conclusions

The results of the present study replicate a number of findings from previous research on biographical correlates of adolescent creativity (Schaefer & Anastasi, 1968; Walberg, 1969a) and confirm several hypotheses from a theoretical formulation of creativity (Chambers, 1969). In particular, evidence is presented showing the correlation of self reported adolescent creativity with the stimulating qualities of the home environment, perseverance in following through activities despite difficulties, and strong intellectual motivation but not necessarily extremely high levels of aptitude.

However, the main question of interest here is in the creative adolescent's adjustment to the high school environment; and again, the evidence supports previous research (Walberg, 1969a) and directly contradicts the Platonic myth. Creative adolescents are apparently even more deeply involved in school and other social activities than other students, although there are comparatively minor differences between each of the creative groups.

The social commentators cited earlier have presented a mass of anecdotal evidence and an apparently convincing case of America as a "mass culture" with strong trends toward conformity. Coleman (1960) has shown that the values implicit in this culture pervade the lives of many high school students. Indeed, evidence can be found (Koff, 1965) that mass culture even socializes children in elementary school to conforming behavior.

Perhaps the incongruous image of the creator happily integrated into an institution of mass culture might be resolved by recognizing the genius of American society and institutions—their diversity and capacity to provide satisfying environments or subenvironments for high brows, middle brows, and low brows in many areas. Certainly the school cannot yet be credited with integrating the children of the indigent into its culture, and certainly Cole-

man was right in attributing the maintenance of a low or middle brow school subculture to the society and to students themselves. But society and the school have made places for its creative members. And while alienation and eccentricity, withdrawal and persecution, and poverty and suffering are sometimes realistically or romantically associated with creativity, they are apparently neither necessary nor sufficient conditions for its fruition.

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VI. Key Ideas for Successful Programing for the Gifted

Introduction

Whenever a proponent of gifted education stands before a conference group and purports to have the essential ingredients guaranteed to produce a successful gifted program, he or she has a responsibility to clarify a few terms. First, how, and by whom, is "success" being defined and second, how, and by whom, is "success" being measured? While these may seem like trite exercises in semantics, such definitions provide the basis for program rationale, design, evaluation, and perhaps most important, funding.

Successful programing can be viewed from both an educational and a political perspective. While ideally the success, and therefore continuation, of a program should be determined by the growth and productivity of the children it serves, the political realities of policy making cannot be ignored. When school boards are facing inflationary costs, declining enrollments, and angry cries for budget cuts, funds for the "academic enrichment program serving 3% of the middle school population" make a tempting target. However, if general scuttlebutt (as indicated by parent phone calls, teacher and administrator attitudes, cocktail party conversations, the PTA's reaction, newspaper coverage, interest from other communities, etc.) has been supportive, the program may be retained because it is seen as good for community morale and rapport. While these indicators may or may not accurately reflect the effectiveness of the program, they are often the determining factors in funding decisions. With these practical realities in mind, key ideas for successful programing should include some suggestions for developing good public relations.

Commitment to gifted children is hampered by elitist assumptions that seem to go with notions of giftedness. If effects on behalf of gifted children are to be increased, nonelitist arguments will have to be mounted. (Feldman, 1979, p. 660)

Feldman's concern represents one of the most important battles facing gifted education and the response to this often used argument—that programing for the gifted creates an elitist group with elitist attitudes—requires more than a verbal explanation. While many leaders in the gifted field have provided philosophically sound arguments with which to respond, suggestions are needed for programs that will actually demonstrate nonelitist attitudes among those children who are in the gifted program and maintain positive self concepts among those who are not.

If all we do is talk nonelitism while what others see is something quite different, we have hardly been successful in our mission.

My first exposure to the MGM [Mentally Gifted Minors] program occurred just before Christmas, 1975. A teacher of second grade assembled her six MGM children at a table to build a gingerbread house from graham crackers, candy, and icing. The rest of the children, who were seated in the same room and had been assigned math workbook exercises, watched the fun the MGM's were having. (The workbook exercises were not remedial; some of the non-MGM's were in fact, achieving far better in math than some of the gingerbread builders.) (Weiler, 1978, p. 185)

Weiler's well founded criticism of this Mentally Gifted Minors program is exactly the kind of scuttlebutt that is planted firmly in the back of decisionmakers' minds as they vote down the MGM funds for the following year. Somehow the rationale written in the program proposal, listing as one of its objectives "the development of more positive attitudes among gifted children toward people of different abilities," is overlooked. The sad truth is that while a hundred satisfied parents may sit back in quiet approval of the activities and achievements of the program, one well written letter to the editor or one irate phone call to the superintendent is the squeaky wheel that is most often heard.

If program developers are not made aware of these realities and given practical, concise suggestions for improving relations and communications between (a) students being served and those

not being served and (b) teachers of the gifted and regular classroom teachers, administrators, parents, school board members, and the community, these programs will not survive. Such political realities cannot be ignored if the gifted movement is to survive these tight economic times.

In the first article in this section, "Identifying Key Features in Programs for the Gifted," Renzulli "isolates those features within programs for gifted that are considered by recognized authorities in the field to be most essential for a worthy program." After identifying the seven key features most often selected, Renzulli discusses each component in greater detail.

Plowman summarizes the various types of programs developed to meet individual needs of gifted students. After assessment, "Programing for the Gifted Child" deals with a number of different routes including regular class enrichment, private study, acceleration, or counseling. Plowman is effective in reminding us that no one approach is right for all students.

While some educators argue there are no teachers who are good only for the gifted and not for all students, there do seem to be characteristics that appear as essential factors in selecting teachers of the academically talented. Bishop outlines some of these characteristics identified through his study of "Successful Teachers of the Gifted." "Opinions of Gifted Students Regarding Secondary School Programs" offers a different and often overlooked perspective. Rice and Bank's study indicates the students' desires for greater freedom and a wider range of course offerings. The suggestions provide a good guide for program expansion based upon student priorities.

Damm's article, "Creativity and Intelligence: Research Implications for Equal Emphasis in High School," describes a key idea for programing within the regular curriculum. His study sought to establish a positive relationship between self actualization and creativity. In a discussion of his findings, Damm calls for a "curriculum incorporating the development of both intellectual and creative abilities." In the final article, Walker deals with another dimension of programing that has met with various degrees of support. He provides a convincing rationale for "Developing Values in Gifted Children" based upon the competitive nature of this society's so-called "educated" adults.

The broad range of articles in this section effectively illustrates the many perspectives from which programs for the gifted can be developed. While no one overall theme can be drawn from these articles, all can contribute to a better understanding of successful programing.

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Identifying Key Features in Programs for the Gifted

Abstract: A study was undertaken to determine which features and characteristics of programs for the gifted are considered by authorities in the field to be the most necessary and sufficient for comprehensive programming. The seven features that were considered to be relatively more essential than others have been designated as key features of differential programs for the gifted. Discussion includes a description of the important dimensions of these key features.

IN recent years renewed attention and effort have been directed toward the development of special programs for gifted and talented students. Evidence of heightened interest in this area is found in the rapidly increasing number of states which have taken legislative action dealing with special provisions for the gifted. In addition to increased support at the state level, a number of communities have developed programs through the use of resources available locally and available under various titles of the Elementary and Secondary Education Act. In view of the renewed interest in this area, it may be useful to call attention to those aspects of differential education for the gifted which are considered to be the keystones of a quality program. Concentration upon a relatively limited number of indispensable program characteristics provides the complicated task of program development with structure and focus, and such an approach may be helpful in avoiding some of the hastily contrived adaptations that characterized the post Sputnik era—adaptations which, in many cases, suffered an equally hasty demise.

The study reported here was undertaken to identify characteristics considered to be the most necessary for a successful program of differential education for the gifted. The purpose of the study was to isolate through systematic procedures a basic core of key features that

could be used for program development and evaluation. The concept of key features represents an essential part of the rationale upon which the study was based. Reflection upon the entire span of characteristics which any educational program might possibly include, from the quality of the classroom teacher to the adequacy of the supplies and materials that a teacher has at her disposal, leads to the conclusion that certain program features and characteristics are extremely more consequential than others. With respect to the whole array of practices and provisions that possess potential, although in varying degrees, to further the objectives of differential education for the gifted, the concept of key features holds that concentration on a minimal number of highly significant features will facilitate both program development and evaluation. This concept also holds that if the more essential features of a program are found to be present and operating excellently, then the probability of less critical features being similarly present is high.

Procedure

The first step in carrying out the study consisted of searching the literature in order to identify the principal aspects of the problem and to locate relevant information and ideas that might prove useful in developing a comprehensive list of features and processes of pro-

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grams for the gifted. This initial step included a nationwide survey aimed at locating lists of criteria used at state and local levels to evaluate special programs for the gifted.

The second step involved the selection of a panel of 21 expert judges. A larger group of persons who had made substantial contributions to the field of education for the gifted was identified according to a number of specified criteria; then this group was asked to nominate, from among themselves, those persons whom they considered to be the most qualified for judging the adequacy of educational experiences for superior and talented students.

The third procedure consisted of developing a relatively comprehensive list of general features and processes which represented various identifiable dimensions of programs for the gifted. This list was based upon those aspects of differential education which have received considerable and continued emphasis in both the general literature on the gifted and in the literature dealing more specifically with programs and program evaluation. The list was submitted to the panel of judges with the requests that (a) they rank in order of importance those features which they consider to be the most necessary for a worthy program, and (b) they stop ranking when that number of features which would assure a program of high quality had been reached. Thus, it can be seen that isolating the key features of programs for the gifted was based on the judgment of persons who were considered to represent the very best thinking in the field of education for the gifted.

The results of this inquiry were tabulated by means of a pooled frequency rating technique that was based on the popular method of assigning to the most frequently chosen response the rank of number one. In order that the rank numbers used in summing the data correspond to increasing magnitudes of importance, each rank was assigned a rank value. The rank values consisted of a series of numbers which were in the exact reverse order of the ranks. Since the maximum number of program features ranked by any one member of the panel of judges equalled 16, this rank value was assigned to rank one. Accordingly, rank two was assigned a rank value of 15 and so on, down to rank 16 which was assigned a rank value of one.

These results are presented in Table 1. The pooled frequency rating of each program feature was expressed in terms of its total rank value. In addition to the 15 program features included in the original inquiry, Table 1 also contains 7 write ins submitted by various members of the panel and the total rank value of each. The program features are listed in hierarchical order according to total rank value.

It is readily apparent from Table 1 that the uppermost 7 features of differential programs emerged as a relatively distinguishable group. It should be noted that the remaining features were both good and desirable elements of special programs; however, the ratings of the judges seemed to warrant the assignment of priorities to certain aspects of program development and evaluation. For this reason, the 7 features which achieved the highest collective ratings by the panel of judges were designated as key features. In the sections that follow, brief attention will be given to these important aspects of differential programs.

Discussion

Key feature A: The teacher. Although there is little question that all students should have well qualified teachers, the relatively greater demands made upon teachers by vigorous and imaginative young minds require that special attention be given to the selection and training of teachers for gifted and talented students. A number of statements in the literature in the form of principles (Ward, 1961; Williams, 1958) call attention to this important dimension of special programming and Newland (1962) has provided us with a breakdown of essential qualifications that can serve as guides in teacher selection.

Key feature B: The curriculum. Experiences comprising the curriculum for gifted and talented students should be recognizably different from the general educational program that is geared toward the ability level of average learners. These experiences should be purposefully designed to evoke and develop superior behavioral potentialities in both academic areas and in the fine and performing arts. A systematic and comprehensive program of studies should reach all children identified as gifted at every grade level and in all areas of the curriculum where giftedness is educationally signifi-

TABLE 1
Matrix of Frequencies with Which Each of 15 Program Features Were
Ranked in Each of 16 Positions by 21 Selected Judges

	Rank	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Total
	Rank value	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	rank value
Program features																		
The teacher: selection and training		7	4	4	1	1	1	1										274
		(112)	(60)	(56)	(13)	(12)	(11)	(10)										
The curriculum: purposefully distinctive		3	4	6	1	2	1	1										240
		(48)	(60)	(74)	(13)	(24)	(11)	(10)										
Student selection procedures		4	4	2	3	2	2											220
		(60)	(56)	(26)	(36)	(22)	(20)											
A statement of philosophy and objectives		9	1	2	1							1						208
		(144)	(15)	(28)	(13)							(8)						
Staff orientation		1	6	2	1	1	3				1							200
		(16)	(90)	(28)	(13)	(12)	(33)				(8)							
A plan of evaluation						4	4	2	1	1		1	1		1			139
						(48)	(44)	(20)	(9)	(8)		(6)	(4)					
Administrative responsibility		1	1	2	3	1	1					1	1					125
		(15)	(14)	(26)	(36)	(11)	(10)					(7)	(5)					
Guidance services				1	2	1	3	1	1									95
				(13)	(24)	(11)	(30)	(9)	(8)									
Ability grouping and/or acceleration					2	1	2	1	1	1			1					92
					(26)	(12)	(22)	(10)	(9)	(8)			(5)					
Special equipment and facilities					3	1	1				1				1			73
					(39)	(12)	(11)				(7)				(4)			
Use of community resources		1							2	1	1					1		50
		(14)							(18)	(8)	(7)					(3)		
Early admission				1		1		1	1									41
				(13)		(11)		(9)	(8)									
Community interpretation						1		3							1			40
						(11)		(27)							(2)			
Supplementary expenditures				1		1						1	1					35
				(13)		(11)						(6)	(5)					
A program of research				1					1					1	1	1		25
				(13)					(8)					(3)	(1)			

Note:—The seven write ins, each receiving one vote, and their total rank values, are as follows: Community Support for Quality Education, 10; Morale and Esprit de Corps, 9; Student Assessment and Reassessment, 9; Student Performance, Evaluation, and Reporting, 10; Interpretation to Parents and Selected Students, 9; Small and Flexible Groups, 13; and Pupil Interpretation, 13.

Numbers in parentheses denote the weighted value of each frequency, i.e., the frequency multiplied by its rank value.

cant. The careful development of distinctive syllabi, methods, and materials will help guard against a fragmentary or "more of the same" conception of differential education. A number of Ward's (1961) theoretical principles of education for the gifted are particularly relevant

to curriculum development and can provide valuable guidance in constructing truly differential experiences.

Key feature C: Student selection procedures. The literature on giftedness is replete with information relating to the identification and

placement of superior students. This key feature acknowledges the existence of all reliably identifiable types of giftedness and calls for the appropriate and discriminating use of several identifying instruments and processes. Periodic screening to obviate overlooking talent of any kind should be followed by increasingly refined, exacting, and fair appraisal of specific abilities. Identification and placement procedures should be carried out at least once annually, and provisions for succeeding search beyond the initial screening and for transfer into and out of the program should also exist.

Key feature D: A statement of philosophy and objectives. The essential role played by statements of philosophy and objectives in guiding the developing of all educational enterprises is well known. Underlying statements of philosophy and objectives should take into account the arguments that support special programs, the broad and specific goals of the program, and the distinction between the objectives of general education and those that have particular relevance to differential education for the gifted. Although there is some possibility of well developed programs existing without written statement about the nature of philosophy and objectives, it seems highly improbable that school systems that have not taken the time to develop such documents will make serious inroads toward the implementation of comprehensive differential programming.

Key feature E: Staff orientation. In order to succeed, any educational venture needs the cooperation and support of those persons who are responsible for its implementation. A sympathetic attitude toward special provisions for the gifted and a basic understanding of the theory and operation of a special program on the part of all staff members are considered to be important elements in helping to realize a program's maximum effectiveness. In most instances, staff members not directly connected with the gifted student program usually participate indirectly by identifying and recommending students for placement. It is therefore necessary that they recognize the nature and needs of potential program participants, are knowledgeable about the available facilities, and are committed to the value of differential qualities of experience.

Key feature F: A plan of evaluation. Within the field of education for the gifted, the need for evidence of program effectiveness is well recognized. But the particularized objectives and relatively unique learning experiences that characterize truly differential programs require the use of objective evaluative schemes that take into account a variety of important program dimensions. One approach to program evaluation developed by Ward and Renzulli (1967) utilized each of the key features here reported as focal points around which a set of evaluative scales were developed. The instrument, entitled Diagnostic and Evaluative Scales for Differential Education for the Gifted, was designed to point out specific areas in which program improvement seems warranted.

Key feature G: Administrative responsibility. A clear designation of administrative responsibility is an essential condition for the most efficient operation of all school programs. Although size and resources of a school system will determine the amount of administrative time that can be allotted to the gifted student program, it is necessary that the person in charge of even the smallest program be given sufficient time and resources to carry out his administrative duties in this area. Already overburdened administrators, supervisors, and teachers who are given the responsibility of a special program as an extra assignment without a corresponding reduction in other duties are likely to approach the task with less than optimal enthusiasm.

Summary and Conclusions

The intent of this study was to isolate those features within programs for gifted that are considered by recognized authorities in the field to be the most essential for a worthy program. The effort was aimed at providing a sound rationale for decision making to persons who are involved in various aspects of programming for the exceptionally able. On the basis of the rankings by the panel of judges, there appears to be justification for designating certain program elements and characteristics as key features in programs for the gifted. Such a designation is considered to be useful in identifying areas in which concentration should be placed in the process of program development

and evaluation. The key features isolated in the present study do not pertain to any given pattern or organization, but rather attempt to embrace excellent practices presently operating, either individually or in varying combinations, and practices that can and should be inaugurated in view of the behavioral potential of students who possess identifiably superior abilities.

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Programing for the Gifted Child

Abstract: The trend in programing for the gifted is marked by a greater concern for individualized instruction in which attention is given to the development of unique traits and skills based on conceptual research of the nature of intellect. Typical approaches such as regular class instruction, private study, acceleration, and counseling are described, and the need for ongoing evaluation is pointed out.

INTELLECTUALLY superior children are often the neglected children in the classroom. Professional recognition of and approaches to overcoming this problem are points of departure in considering aspects of programing.

Trends

In recent years there has been a shift in emphasis—from a national defense-sputnik approach, which viewed the gifted as a resource or a commodity, to concern for the full development of the individual child for his own sake.

In the first approach, improvement of society is a major purpose in programs for the gifted. These programs portray the gifted students as tools of the state for making advances in science and technology and for solving problems of communication and production; they are seen as workers to be exploited for the general welfare. The other approach uses the more fundamental tenet of the democratic faith stressing the sanctity, dignity, and full development of the individual, rather than just the individual's contribution to society. Further, these programs "perform the priceless, rare task of developing specific genius, 'that' in Leonardo daVinci which is exclusively Leonardo daVinci [Ward, 1963]." This approach seeks to develop creative and compassionate human beings who have a reservoir of useful knowledge, skill in higher intellectual process-

es, and values which direct them toward that which is noble and good. These programs do not want judgmental, decisive, habitualized individuals who see everything as either right or wrong, good or bad—but, rather, individuals free to toy with an array of ideas, to laugh at novel associations of words and things, and to produce new products, ways of doing things, and knowledge. Increasing interest is evident in guidance and counseling, in art and music, in values and philosophy—services and courses guided by objectives in the affective domain.

There has also been a shift from euphoric proclamations about the values of something nebulous called enrichment to development of more specific programs based upon such concerns as individualizing instruction, extending awareness, providing an abundant environment, exploring subjects in breadth, understanding them in depth, seeing many alternatives, relating ideas and facts within different subject areas, and meeting guidance needs of boys and girls. An increasing number of school districts appear to be moving from initial emphasis on hastily contrived enrichment or acceleration programs to sound, comprehensive programs including three or more program prototypes. To improve the quality of educational experience, these districts aim to develop those perceptual, creative, and intellectual traits which characterize the productive mind

through lesson goals, classroom methods, assignments, and evaluation procedures, suggested by conceptual research on human intellect and creativity and demonstration programs featuring differentiated learning experiences.

Emphasis is likewise shifting from sole preoccupation with the "clean, polite, and orderly" academic achiever to all gifted children—the underachiever, the highly creative child, the educationally deprived child, and the highly gifted child.

Assessment

Programing starts with an assessment of a child and proceeds to placement in environments and experiences. These will be planned to foster behavioral characteristics of the gifted child, and to provide a milieu in which it will be possible to ferret out and develop his uniqueness.

Characteristics rating sheets, screening and nomination forms, case study records, and child study programs may suggest that a given gifted child needs access to, for example, intellectual peers, exemplary individuals, empathetic mentors, or special resource persons. A need may be indicated for access to ideas about himself, the nature of man, and the nature of human institutions. Other clues might suggest the desirability of acquainting a child with certain social, economic, cultural, ecological, and educational factors which affect life and living. For example, a child might compare environments which provide much freedom for individuals with those characterized by many restraints.

Programing is a continual process and as such must be based upon continual appraisal of development of interests, knowledge, intellectual skills, traits of creativity, attitudes, aspirations, and values. At any given time, a teacher should be aware of where each of his students is with respect to knowledge, significant concepts, and skills. If the teacher is expected to provide learning experiences that begin at the level of present accomplishment and extend to higher levels, he must have comprehensive knowledge of present attainment. To be sure, learning is not always characterized by smooth, sequential development. The

teacher, nevertheless, can attempt to articulate learning sequences and episodes in such ways that there appears to be a natural flow of ideas and development from one position, assumption, or knowledge base to the consideration of a whole galaxy of ideas. This task certainly calls for skill in bringing into focus a dynamic picture of development of individual human beings. It requires the teacher to be both an educational diagnostician and a prescription expert. Successful performance of these roles is dependent upon specific information—a case study record rather than a cumulative folder containing a mishmash of material.

Types of Programs for the Gifted

Regular class enrichment. Enrichment in regular classes is often advocated for gifted children who may not be physically or socially mature enough for special classes or grade level acceleration. This type of program might fit school settings where no formal program for the gifted has been established. It is sometimes initiated in schools that have community attitudes which favor enrichment over other types of programs, but have limited funds. In schools where teachers with broad cultural backgrounds ordinarily group for instruction, individualize assignments, and meet different needs within the regular classroom, this type of enrichment program is a logical approach. In general, enrichment programs in regular classes should provide greater breadth and depth of learning, more opportunities for developing creative behaviors, increased emphasis on rich social experiences, and ample freedom to pursue independent study.

Private study. Correspondence courses and certain tutorial and independent study programs are pursued most satisfactorily by children who require a minimum amount of direction from the teacher. However, children programed into correspondence courses should meet with a teacher once a week to review what has been learned, to plan next steps, and to resolve any problems.

Acceleration. Acceleration or flexible progression appears to work best for high achieving gifted children who are emotionally and physically mature and who seek opportunities to associate with older children and adults.

Such programs thrive best in communities where equal education is understood as providing opportunity to progress according to individual ability rather than as providing identical experiences.

Counseling. Special counseling is of crucial importance to the low achieving gifted child, the highly creative gifted child, and the gifted child with special psychological needs. Classes designated just for the gifted are often for high achieving pupils and pupils mature enough to be challenged by and to profit from increased competition. Some combined group counseling and special class provisions have been planned for underachievers and other gifted children with special problems or needs. Although certain kinds of programs are especially appropriate for certain kinds of gifted pupils, involvement in any of these programs might transform a rebellious, underachieving gifted child into a child who because of sufficient challenge and interest no longer rebels against his teacher and his school, has due regard for other persons while expressing his individualism, and who reduces the gap between his potential and actual achievement.

Ideally, a child moving into a new community could be placed initially in a somewhat sheltered enrichment program. After becoming acclimated, he might become a candidate for special class offerings or acceleration. The day may come when each gifted child will have opportunities within each school year for enrichment, flexible progression in the acquisition of skills and knowledge, special class experiences, independent study, and counseling.

Attitudes

If we can describe with reasonable accuracy (a) the philosophical stance of a given community with respect to education, (b) the sophistication of its teachers, and (c) provisions made for needed materials, we should have the knowledge necessary for building successful programs and for programming children with certain traits into certain classes and learning experiences.

A promising practice in fostering attitudinal readiness and motivation of teachers and in building specialized teaching skills is the use of self assessment procedures such as those em-

ployed by the Illinois Program for Gifted Students and by "Excellence in Education," a research project in the Los Angeles area. In some communities it would be necessary to start an enrichment program by providing extra books and some consultant service. After this program had been accepted in the community, it might be possible to offer special classes and counseling. In time, teachers, consultants, counselors, administrators, and school board members might take an honest and thorough look at all the possibilities for full development of children and youth.

Mobilization and Use of Resources

Programs in school districts should be under the administrative responsibility and leadership of one person; in districts of 5,000 average daily attendance, this position should be a minimum of a half time assignment. His responsibilities in programing require the mobilization and prudent use of resources, which may lead to (a) improving competencies of consultant, instructional, and counseling personnel; (b) developing materials, flexible scheduling, and team teaching; and (c) using out of school persons and facilities. Teachers who work with the gifted know that they thrive on vast quantities of material. Teachers need help in getting the materials, in tailoring individual assignments, and in experimenting with new ideas. For example, there are in most communities, including rural areas, a surprisingly large number of special resource persons—forest rangers, engineers, physicians, teachers, military personnel, water management persons, and meteorologists, to name a few. Some may be exemplary as creative individuals, as authorities in certain fields, as inspiring persons, as problem solvers, or as problem finders. Principals also survey staff members and community people to find special hobbies, travel experiences, career backgrounds, and abilities to match with gifted students.

In a number of communities school district personnel are supported by associations which help (a) mobilize special resource persons, (b) develop special classes and other learning experiences, (c) provide teachers with scholarships and summer grants, (d) purchase certain professional materials, and (e) assist teachers

in the performance of certain chores such as organizing materials, arranging displays and learning centers, typing, and duplicating materials. A national organization with similar goals is the National School Volunteer Program.

Feedback and Evaluation

As in program development, it is reasonable to expect districts to start at one level of evaluation and gradually progress to more sophisticated levels. In fact, it may be quite useful after the first year to ask involved persons—teachers, parents, and children—what they think about the special provisions; however, the possibility of getting a general halo or Hawthorne effect must be recognized. This approach may show ideas and attitudes generated by program activities.

The newly developed Ward-Renzulli Diagnostic and Evaluation Scales for Differential Education of the Gifted would be of help to persons wishing to appraise programs. Results of field testing these scales in North Carolina, New York, Illinois, and California have been reported (Ward, 1967).

Supportive Technology

It is common knowledge that we have the technical means of (a) keeping track of student programs; (b) providing pertinent information needed in learning, teaching, and guidance; (c) simulating and allowing pupils to manipulate simulated social and scientific conditions; (d) providing immediate student responses to the teacher and categorizing these by such taxonomies as the Structure of the Intellect (Guilford & Merrifield, 1963) or Bloom's Taxonomy of Educational Objectives (Bloom, 1956); and (e) instructing and counseling children and youth.

Within the foreseeable future, we may design and acquire integrated systems for developing human potentiality. Important aspects of such systems would be electronic equipment for retrieval, display, and manipulation of data; experiential films for extending awareness and for overcoming cultural deprivation and rural isolation; computer assisted instruction and guidance programs; display systems that show teachers instantly which students do and do not understand instruction; simula-

tions; flexible scheduling; learning stations at home and at other places away from school; closed circuit television; and improved programs in educational television. Envisioned now is the possibility of having paid access via one's telephone to college and high school courses, skill development programs, technical information, facts helpful in selecting a career, and enriched leisure time activities. The emphasis will be upon "turning people on"—upon making man more rational, more creative, and more humane. Basic to this will be an expansion of man's own consciousness and an understanding of himself.

Typological and Taxonomic Approaches

By knowing the characteristics and needs of the group we call gifted it is possible to plan instructional programs particularly suited to them as a group or typology. This is especially true when we think about developing translation skills, skills of analysis, the ability to generate many possible solutions to a given problem, and the ability to evaluate an event or situation by external criteria or by one's own system of values. This approach is in fact an intermediate step between generalized whole class instruction of heterogeneous groups of children and individualized instruction of one child. While pointing out the value of this approach, one must also indicate that gifted children vary greatly in attainment, ability, creativity, attitudes, motivation, and interest. Certain programs are needed for subgroups such as the underachieving gifted child, the high achieving gifted child, and the highly creative child. It may be necessary to do some grouping on the basis of interest as well as on the basis of aptitude.

In order to do this grouping, the taxonomic approach may be used. Taxonomies such as those proposed by Bloom (1956), Guilford (1963), Bruner (1960) and others provide us with categories, principles, and in a few instances with hierarchical lists of objectives. They help us to differentiate among experiences and to know which are likely to be uniquely suited to certain types of children.

Using the Cognitive Domain of Bloom's Taxonomy of Educational Objectives, teachers may focus initially on developing banks of

classroom questions, examination questions, and assignments. This may be aided by Sanders' (1966) book and through use of the 14 California Project Talent films. Each of the films is designed to help teachers understand and to foster a different intellectual skill. A California Project Talent publication on anthropology (Robeck, 1966) demonstrates use of Guilford's Structure of the Intellect as a lesson planning and curriculum construction tool.

It is interesting to note that persons in a number of school districts have reported that emphasis upon gifted child programs has resulted in improvement of the total educational program. It seems that typological and taxonomic approaches—with the requirements of careful identification, a case study on each child, a written plan which describes objectives, special facilities, special experiences, and techniques of evaluation—do point the way toward developing and improving programs in other areas of special education.

Conclusion

Space does not permit thorough consideration of all aspects of programing. Certainly educators also would want to give more attention to physical and psychosocial environments. Each of these might be a topic of a series of articles and additional research.

This article defines some of the parameters of programing for the gifted, shows some trends, and proposes certain steps that should lead to professional growth. Programing for the gifted

can result in improvement of the total educational program. It can help each person involved to become a more open, more productive, and more interesting human being.

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Successful Teachers of the Gifted

Abstract: The purpose of this study was to analyze selected characteristics of high school teachers who were identified as successful by intellectually gifted high achieving students, and to discover what differentiated these teachers from teachers not so identified. More specifically, the study was concerned with personal and social traits and behaviors, professional attitudes and educational viewpoints, and classroom behavior patterns of effective teachers of gifted high school students.

WHILE it is widely recognized that the success of any special educational program depends largely on the teacher, very little research attention has been given to the special qualities which may be desirable for teachers of gifted and talented students. If it is true that learning emphases and teacher roles vary in relation to the characteristics of the students taught, it is important to gain increased understanding of the traits and behaviors which characterize successful teachers of the gifted.

The basic research question of this study was: What characterizes high school teachers who are identified as successful by intellectually gifted, high achieving students and what differentiates these teachers from teachers not so identified? More specifically, the investigation attempted to discover answers to the following questions:

1. What are the personal and social traits and behaviors which characterize high school teachers who are identified as successful by intellectually gifted, high achieving students?
2. What professional attitudes and educational viewpoints characterize these teachers?
3. What are the patterns of classroom behavior of teachers who are judged effective by

gifted students? How do they perceive their teaching role and how do they assess their effectiveness in this regard?

It is believed that the identification and description of teachers who are successful in working with gifted students will provide reliable information as a basis for increased understanding of the desirable qualities for teachers of the gifted. The identified teachers may provide a model or prototype insofar as the traits and behaviors investigated by this study are concerned. The description and analysis of their characteristics might provide useful clues for those who are concerned with the preservice education and the inservice placement of teachers for gifted students. It might also provide guidance to teachers who are faced with the challenge, whether in regular or special classes, of adequately providing for the special educational needs of intellectually superior students.

Background of Study

The study was an outgrowth of the First Annual Governor's Honors Program for gifted and talented high school students in Georgia. Of the 186 high school seniors from 65 different school systems who participated in an academic area

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of the program, 181 completed questionnaires wherein they listed their high school teachers for academic subjects prior to their participation in the Governor's Honors Program. Each student indicated the teacher who, in his judgment, best represented each of twelve descriptive statements on the questionnaire relative to teacher traits and/or behavior. He selected and discussed the teacher who was, in general, the best and most successful teacher for him—the one who had made the greatest difference in his educational career.

Study Groups. From the lists of teachers submitted by the students, three groups were selected for study. One group included 109 teachers selected by one or more gifted students as his "most successful" high school teacher. Another group included 97 teachers who were selected at random from a list of over 500 teachers who had formerly taught students in the First Governor's Honors Program, but who had not been selected by any of these students as his "most successful" teacher. The group of 109 identified teachers was called the identified group; the group of 97 "nonselected" teachers was called the validity sample.

The third group included 30 teachers in the identified group who were selected for intensive study, including a personal interview. This group, called the interview sample, was a stratified random sample of the total number of identified teachers. It included 30 teachers from 29 different schools of varying sizes in all sections of Georgia.

Sources of Data. Every teacher in the study completed a copy of the Teacher Characteristics Schedule (Ryans, 1960). The schedule (TCS) is a 176 item inventory which purports to estimate teachers' classroom behaviors, attitudes, educational viewpoints, verbal ability, and emotional adjustment from their responses to multiple choice items relating to preferences, judgments, activities, personal background, etc. The items have been empirically validated and are known to be correlated with more direct criterion data reflecting teacher traits and behaviors. The following teacher traits and behaviors are estimated by the TCS scales (Ryans, 1960):

warm, understanding, friendly versus aloof, egocentric, restricted teacher classroom behavior

responsible, businesslike, systematic versus evading, unplanned, slipshod classroom behavior

stimulating, imaginative versus dull, routine teacher classroom behavior

favorable versus unfavorable opinions of pupils

favorable versus unfavorable opinions of democratic classroom procedures

favorable versus unfavorable opinions of administrative and other school personnel

learning centered ("traditional" or "directive") versus child-centered ("permissive" or "indirective") educational viewpoints

superior verbal understanding (comprehension) versus poor verbal understanding

emotional stability (adjustment) versus instability [p. 388].

A response analysis of the TCS items provided additional data relative to the personal and professional status of teachers in the different study groups. Questionnaires were completed by the students who selected the teachers for this study. These questionnaires provided extensive data relative to the identified teachers.

In addition to information obtained from the TCS and the student questionnaires, data on the interview sample were collected from the following sources: (a) personal interview with each teacher, (b) Wechsler Adult Intelligence Scale (verbal section), (c) Edwards Personal Preference Schedule, and (d) college transcripts.

In the personal interview, each teacher was asked to respond to a series of open ended questions relating to role perception, professional aspirations, attitudes toward gifted students, and related issues. As part of the interview, an assessment was made of the teacher's general intellectual ability through the administration of the verbal section of the Wechsler Adult Intelligence Scale. Written permission was obtained from each teacher to review copies of his college transcripts on file in the Division of Certification at the State Department of Education. Copies of the Teacher Characteristics Schedule and the Edwards Personal Preference Schedule (EPPS) were left with each teacher to complete and return.

Each of the sources listed above provided data relative to important teacher characteris-

tics. One major phase of the study was concerned with a description and comparison of teachers included in the identified group and the validity sample. Other aspects of the study were confined to a description and analysis of characteristics of those teachers in the interview sample, as revealed by the more extensive study procedures employed with this group.

Discussion

Major study findings are presented within the framework of the specific questions listed in the statement of the problem. The first question was stated as follows: What are the unique personal and social traits and behaviors which characterize high school teachers who are identified as successful by intellectually gifted, high achieving students?

It has been proposed that "teachers of the gifted should be deviant with respect to those qualities common to the gifted group [Ward, 1961, p. 115]." Several findings of this study lent empirical support to the validity of this proposal. One of the areas where this was best demonstrated was the intellectual level and interests of the identified teachers.

Intelligence Level of Identified Teachers. Several findings suggested the intellectual superiority of teachers identified as successful by gifted high school students. The most cogent was the mean score earned on the Wechsler Adult Intelligence Scale (WAIS), which was given to teachers in the interview sample. Their mean score of 128 on the WAIS placed them 1.87 standard deviations above the mean, or in the upper 3 percent relative to the general adult population. While giftedness is generally conceded to be a broader concept than can be represented by a single IQ, it is recognized that those who score in the upper 3 percent on an individually administered test of intelligence evidence mental superiority.

Additional evidence of the superior mental ability of the identified teachers was revealed by their mean score on the scale of the TCS, which is purported to estimate the respondent's verbal ability (comprehension). The mean score of teachers in the identified group was significantly higher than the mean score of teachers in the validity sample on this TCS dimension.

Teacher Interests and Activities. Several significant differences between the identified group and the validity sample were revealed in the intellectual nature of the personal interests and activities they pursued. These data suggested a total life pattern of the identified teachers dissimilar to other teachers. This was perhaps best demonstrated by their literary interests. A significantly higher percent of the identified group than the validity sample followed what they called a literary hobby. This was evidenced in several ways. A significantly higher percent belonged to a book purchasing club. A significantly larger number frequently read collections of poems, essays, stories, etc. The same was true relative to the reading of biographies. A larger proportion of the identified group indicated that they frequently read fiction, read book reviews in newspapers or magazines, and preferred *Harper's* magazine to *Saturday Evening Post*, *Popular Mechanics*, or *Redbook*.

Teachers in the identified group also indicated a higher level of cultural interest and involvement. A significantly higher proportion stated that they attended concerts, exhibits, and the like when the opportunities were available. A higher percent had visited an art gallery or museum within the past year and a significantly greater number had bought some painting or art work within the past year.

The desire for intellectual growth was cited as a reason for choosing teaching as a career by a significantly greater number of the identified teachers. Continued evidence of this desire was reflected in the higher incidence of teachers in the identified group who had taken a college course within the past two years.

Achievement Level of Teachers. It has been suggested that gifted students have much to gain from teachers who manifest high intelligence and characteristics positively correlated with superior intellect (Ward, 1962). High achievement tends to be positively correlated with high intelligence. Several data obtained in this study indicated that the identified teachers were characterized by a high achievement level.

A strong need to achieve on the part of the successful teachers was reflected in their mean score on the achievement scale of the Edwards Personal Preference Schedule (Edwards, 1959).

Edwards defines achievement as "the need to do one's best, to be successful, to accomplish tasks requiring skill and effort . . . to do a difficult job well . . . to be able to do things better than others [Edwards, 1959, p. 11]." In six of seven comparisons with normative data and with teachers in other study groups (Merrill, 1960; Guba, et al., 1959; Jackson and Guba, 1957), the interview sample showed a higher mean score on achievement. In three comparisons the mean score on achievement was significantly higher.

Evidence of high achievement was also reflected in the past scholastic performance of teachers in the interview sample. These teachers earned a mean grade point average at the undergraduate level of 2.95 in professional education courses and 3.14 in courses in their major teaching area, based on a 4.00 system. At the graduate level, they earned a mean grade point average of 3.30 in professional education courses and 3.48 in the teaching area preparation. Over 70 percent of the teachers in the identified group indicated that they were "good" or "outstanding" students while in college.

Less direct data relative to the identified teachers' high achievement level were provided by other findings of this study. Ninety-three percent of the identified teachers indicated that they chose teaching as a career because they enjoyed past satisfactory experience in school work. A significantly greater number of teachers in the identified group were advised by former teachers that they would be good teachers. While the teacher advisor may have had numerous and varied reasons for his advice, it seems unlikely that the suggestion would have been proposed to a low achiever.

Student descriptions of the selected teachers included repeated testimony to the achievement level of the teachers. A thorough command of their subject matter and a patent desire to increase their own knowledge and understanding were frequently noted by the students. The following excerpts from students' statements about different teachers are representative:

Her own desire for more knowledge has inspired most of her students and awakened in us a longing to reach out and to learn.

Her vast knowledge and interest in a variety of subjects influenced me to desire learning for

the sake of becoming a well-rounded, intelligent person rather than merely for the sake of making high grades.

Through her enthusiasm for her subject and for innumerable other topics, she instills in her classroom an atmosphere of intoxicating discovery.

Other Personal Traits and Behaviors. Several other traits and behaviors of teachers were considered in this study. On several variables there were no significant differences between teachers identified as successful by gifted students and teachers not so identified. These included such variables as sex, marital status, type of undergraduate institution attended, highest degree held, course work preparation, and extent of association with professional organizations.

Two personal variables on which teachers in the two groups did differ were age and length of teaching experience. These differences were not great, however, and could not be tested for statistical significance. The median age of teachers in the identified group was in the 40 to 44 age range; the median age of teachers in the validity sample was 45 to 49. The median length of teaching experience for the two groups was from 10 to 14 years and 15 to 19 years, respectively.

The use of student evaluations as a research procedure in studies on teaching effectiveness has been widely criticized. Morsh and Wilder (1965) contend that students will choose a teacher who is "young, genial, and entertaining, while the serious, more experienced individual . . . is rarely popular [p. 61]." This criticism of student evaluations for research purposes does not seem justified, relative to the present study. Less than 2 percent of the selected teachers were in the 20 to 24 age range, while more than 8 percent were in the 60 or over category. Fewer than 3 percent of these teachers had less than three years' teaching experience and nearly 30 percent had 20 or more years' experience. It is true, however, that the students preferred teachers who were slightly younger and less experienced than their teaching colleagues.

Professional Attitudes and Educational Viewpoints

The second question posed in the statement of the problem was: What professional attitudes and educational viewpoints characterize these

teachers (those identified as successful by gifted students)? Data relative to this question were collected from several sources and are discussed in this section.

Two of the teacher characteristics estimated by the TCS relate to professional attitude and philosophy. One purports to estimate favorable versus unfavorable attitudes toward pupils, and the other indicates learning centered "traditional" versus student centered "permissive" educational viewpoints. TCS results for the identified group on these two scales indicated that these teachers had more student centered educational viewpoints and more favorable attitudes toward students than teachers in the validity sample. The difference was statistically significant on both dimensions.

The results of the EPPS administration lent additional support to the conclusion that identified teachers were characterized by sensitivity to others, which was probably reflected in a student centered approach to teaching. Mean scores on five EPPS variables were especially suggestive of this attitude.

The EPPS variable on which the interview sample scored most consistently and significantly higher than comparison groups (Merrill, 1960; Guba, Jackson, and Bidwell, 1959; Jackson and Guba, 1957) was *Intracception*. Edwards defines *Intracception* as follows:

To analyze one's motives and feelings, to observe others, to understand how others feel about problems, to put one's self in another's place, to judge people by why they do things rather than by what they do, to analyze the behavior of others, to analyze the motives of others, to predict how others will act [Edwards, 1959, p. 11].

An EPPS variable on which both male and female teachers in this study scored lower than all comparison groups was *Autonomy*. In five cases the difference was statistically significant. *Autonomy* has been defined by Guba, Jackson, and Bidwell (1959) as the need "to act without regard to the opinion of others [p. 3]." An EPPS variable on which female teachers in the study scored significantly lower than the three groups with whom they were compared was *Exhibition*, which has been defined by Guba and his associates as the need "to talk cleverly for the sake of impressing others, to be the center of attention [Guba, et al., p. 3]."

Male teachers in the interview sample scored significantly lower than three of four groups with whom they were compared on two EPPS variables, *Succorance* and *Aggression*. *Succorance* reflects a self centered interest in the need "to gain encouragement and sympathy from others when one is depressed or hurt [Guba, et al., p. 3]." *Aggression* has been defined as "the need to show anger and criticize others openly [Guba, et al., p. 4]."

This profile of EPPS results suggests that the teachers in this study were not overly concerned with themselves. They seemed to be sensitive to the feelings and needs of others, e.g., their students.

The teachers' favorable attitudes toward students also were manifested specifically in relation to gifted students. All teachers in the study were asked to indicate what type of class they would prefer to teach. A significantly higher percentage (.01 level) of the identified group than the validity sample stated that they would prefer to teach a class of exceptionally bright students rather than a class of average students, a class of slow and retarded students, or a class of children of widely varying ability. Nearly three-fourths of the identified group stated this preference. Not one of them stated that he would prefer to teach a class of slow or retarded students. A significantly higher percentage of the teachers in the validity sample than in the identified group indicated that they would prefer to teach a class of average children. Favorable attitudes toward gifted students were further evidenced in the teacher interviews with the interview sample. Every teacher in the sample expressed his support for special educational attention to the gifted, though the specific proposals for meeting the need varied widely. Most preferred special grouping by ability, achievement, and/or interest.

Teacher Classroom Behavior

The third specific question listed in the statement of the problem was stated as follows: What are the patterns of classroom behavior of teachers who are judged effective by gifted students? How do these teachers perceive their teaching role and responsibility and how do they assess their success in this regard? Conclusions

based on study findings relative to this question are presented below.

Three of the dimensions estimated by the TCS relate to teacher classroom behavior. On two of those three variables, the identified teachers differed significantly from the teachers not so identified. The identified group scored significantly higher on the scale which provides an estimate of the respondent's responsible, businesslike, systematic versus evading, unplanned, slipshod classroom behavior. They also scored significantly higher than the validity sample on the scale which purports to measure the teacher's stimulating, imaginative versus dull, routine teacher classroom behavior.

It was previously noted that teachers in the identified group also scored significantly higher on the TCS variables which reflect favorable attitudes toward students and student centered educational viewpoints.

The estimates of teacher classroom behaviors of the identified teachers indicated by TCS results are supported by other findings of this study. Testimony of the identified teachers' stimulating and imaginative classroom behavior was provided by the student questionnaire responses. The most frequent reason the students mentioned for having selected the teachers for the study was the teacher's stimulating, motivational, and inspirational qualities. Typical student comments in this regard follow:

Mrs. E., more than anyone else, made me realize how much I had to learn. Only when I saw this did my real education begin.

She presented new horizons rather than new barriers. . . . Above all, she set an example—an example of excellence.

Mrs. S. encouraged me to aspire to seemingly unattainable heights, some of which I have already reached.

Mr. D. showed me that my opinion is of value, and explained the importance of individual thinking.

Mr. T. makes a student do a great deal of thinking for himself.

Her dedication to teaching has made a lasting impression on me. It is because of Mrs. P. and her work that I have chosen teaching as a career.

Mr. H. was one of the few teachers I've had who provoked me and my classmates to think

clearly and speak factually. He encouraged us to evaluate, analyze and understand whatever we heard and read.

She stimulates the willing and the unwilling to accomplish on their own. Her continued interest encourages the faltering and spurs the worker to seek higher goals.

The second most frequently mentioned reason given for selecting a teacher was the teacher's success in initiating or increasing the student's interest in a particular subject area. The following excerpts from student comments are typical:

Before Miss B. gave literature meaning, I was too science-oriented, but now I have learned to appreciate other things.

He took science, which previously had been only vaguely interesting to me, and made it come to life and greatly increased my desire to become an engineer.

Under her, I first began to truly read poetry, and this is one experience I now treasure.

He encouraged and guided my interest in his subject by leading me to discover and experience it for myself.

She taught me to love a subject which I had hated and thought I simply didn't have the ability to learn.

The third reason most often mentioned by the students for selecting a teacher was related to teaching methodology—the ability of the teacher to present his subject in a meaningful way and/or to communicate it effectively to his students.

When you're working with Miss L., it's as though you are the only two people in the room—a two-man team with a captain who won't holler "enough" until his team-mate understands all.

Miss M.'s imaginative and enthusiastic presentation of world history made interesting a subject that usually bores me to tears.

She "supervised our education" rather than "force fed" us.

He was a neat teacher who did not treat a possibly dull subject in a dull manner.

Additional evidence in this regard is provided by the teachers' self descriptions. Teachers were asked to indicate characteristics which they felt were most descriptive of themselves. A significantly higher proportion of the identified group than the validity sample stated that

enthusiasm was a strong trait in their own make-up.

Student comments also lent support to the findings that the identified teachers had favorable attitudes toward and interest in their students. The teacher's personal interest in his students was the fifth most frequently given reason stated by students for selecting a teacher. The spirit of student statements in this regard is expressed in the following excerpts:

She honestly cares whether or not her students learn the material and is genuinely interested in her students as people and not merely as names to be associated with grades.

Mr. W. was my only teacher who was willing to go above and beyond his duty to encourage independent study. He was never too busy to stop his own work during his spare time to discuss important topics with me or to suggest new things to do to broaden my interests.

She was interested in me and had confidence in me so I couldn't let her down. I became a different student because of her loyal interest in my welfare.

Further evidence of the identified teachers' permissive (student centered) educational viewpoints was provided by their own expressions of opinion. A significantly smaller proportion of those in the identified group than in the validity sample stated that they believed attentiveness of students to be a more important indication of a good class than willingness of students to try and to volunteer, preparedness of students, or courtesy of students. A larger proportion of the identified teachers indicated that willingness of the students to try and to volunteer was a better indication of a good class than the other three factors mentioned above. The greater emphasis of the identified group on student activity and participation, rather than on student attentiveness (which implies a passive student response), indicates a more student centered philosophy. More of the identified group than the validity sample indicated their belief that a severe and aloof manner is a more important failing in a teacher than an inability to maintain a systematic, orderly approach or an inadequate mastery of subject.

It should not be concluded from this and related findings reported above that the identified teachers deemphasized the importance of

subject matter. The majority of the identified teachers indicated their belief that inadequate mastery of subject matter is a more important teacher failing than inability to maintain a systematic and orderly approach or a severe and aloof manner. A larger proportion of the identified group than the validity sample also stated that they believe it is more important for a teacher to extend subject matter knowledge rather than to keep up to date on educational theories or to take part in community activities.

Several other study findings indicated that teachers who are judged successful by gifted students emphasize the importance of subject matter. The students often cited the teacher's interest in and command of his particular discipline as their major reason for choosing him as their most effective teacher. The teacher's success in transmitting this interest in a particular subject to the students was also noted by many students.

Role Perception. Interviews with the teachers in the interview sample provided data relative to the teachers' classroom behavior as they perceived it. These data provided additional support to the major conclusions suggested above.

The majority of teachers interviewed stated that they believe their major role is one of motivating students to want to study, learn, and think independently. They frequently noted their responsibility to instill an interest in and appreciation for their particular subject as well as for learning in general. Very few, however, saw their major role as imparting a specific body of knowledge. They emphasized the importance of demonstrating a personal interest in each student.

Their descriptions of personal incidents which they felt represented effective and ineffective classroom behavior reflected this philosophical position. Effectiveness was usually defined in terms of methodological and/or motivational success experiences, and ineffectiveness was represented by lack of success in these areas.

Conclusions

The conclusions which are suggested by the major study findings can be summarized as follows:

1. Teachers who were judged effective by intellectually gifted, high achieving students did not differ with respect to teachers not so identified, relative to such variables as sex, marital status, type of undergraduate institution attended, highest degree held, course work preparation, and extent of association with professional organizations.
2. Successful teachers of gifted students tended to be mature, experienced teachers.
3. Teachers who were successful with mentally superior students were mentally superior themselves. They stood in the upper 3 percent, relative to the general adult population, and significantly higher than their teaching colleagues.
4. The effective teachers tended to pursue avocational interests which were "intellectual" in nature. They had a significantly greater interest than their teaching colleagues in literature and the arts, and in the cultural life of their community.
5. The identified teachers were characterized by high achievement needs—they attempted to do their best and to succeed. This was reflected in past scholastic achievement as well as present teaching success.
6. A significantly greater number of the identified teachers decided to become teachers because of a desire for intellectual growth and because each was advised by a teacher that he would be a good teacher.
7. Effective teachers had more favorable attitudes toward students than other teachers. They took personal interest in their students and were sensitive to the students' motives and behaviors; they attempted to see things from the students' point of view and to understand how the students felt.
8. Effective teachers tended to be more student centered in their teaching approach. They encouraged students to participate in class activities and they took students' opinions into consideration.
9. Effective teachers were more systematic, orderly, and businesslike in their classroom approach.
10. Teachers who were effective with gifted students were more stimulating and imaginative in the classroom than their teach-

ing colleagues. They were well grounded in and enthusiastic about their particular subject and about teaching. They defined their success in terms of how well they motivated their students to want to study, to learn, and to think independently. They were able to instill interest in and appreciation for their subject in their students.

11. Teachers identified as effective by gifted students supported special educational provisions for gifted students. A significantly greater percent of them preferred to teach a class of exceptionally bright students than did their fellow teachers.

In summary, these conclusions indicated that there are unique personal and social traits, professional attitudes, educational viewpoints, and classroom behavior patterns which characterize successful high school teachers of intellectually gifted, high achieving students.

Implications

The major findings of this study and the conclusions proposed above suggest several implications for educational planning and programming. It behooves those who have the responsibility for the preservice education, placement, and/or guidance of teachers to base their policies and decisions on the most reliable information available.

Assuming that the identified teachers in this study can serve as a prototype, the conclusions listed above suggest factors which might guide the decision making processes of those charged with the important responsibilities of educating, selecting, and guiding teachers of gifted high school students. More specifically, the implications this study suggested follow:

1. School administrators should give careful consideration to the proper selection and placement of teachers for gifted students. Teachers placed with special classes of bright students should possess those qualities which are common to the gifted group. They should also have a special interest in working with these students. The findings of this study indicate that a large percentage of teachers who are successful with these students state a definite preference for teaching students of exceptional ability.

A recent report of the National Commission on Teacher Education and Professional Standards (National Education Association, 1965) notes that misassignment ranks fifth among the twelve most important factors which educators cite as limiting the quality of education. One of the violations mentioned in the report is the teachers' failure to understand particular groups of students. The majority of misassignments is reported in grades ten through twelve.

Teachers are sometimes assigned to classes of gifted students on the basis of seniority. Another common practice is to assign high school teachers to several different types of classes (i.e., slow, average, gifted) on the pretext that such an assignment adds variety to a teacher's work schedule and effects a form of "distributive justice." Both of these practices undoubtedly result in misassignment of teachers for gifted students. While gifted students may continue to learn "in spite of" and not "because of" the teacher, the results of this study indicate that there are special qualities which characterize teachers who are successful with these students. Attempts should be made to identify those teachers who will provide the optimum educational experience for students of exceptional ability and then make assignments on this basis.

2. The special qualities and interests which characterize teachers who are successful with gifted students suggest the need for identifying preservice as well as inservice teachers to work with these students. The problem of attracting able young people into the teaching profession has received considerable attention in recent years. The report of the Commission on Teacher Education and Professional Standards (National Education Association, 1965) calls this the number one problem limiting the quality of education today.

If teacher education institutions were to develop special courses or programs at the undergraduate and graduate levels which

would specifically prepare able young people to teach gifted high school students, more superior college students might be attracted to the teaching profession.

3. Special preparatory programs for teaching gifted students should result in special certification in this area. The unique nature and needs of gifted students call for the recognition of educational personnel who possess those personal qualities and professional competencies which will guarantee that gifted students receive the optimum educational experience which they deserve and which the democratic ideal demands.

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Opinions of Gifted Students Regarding Secondary School Programs

Abstract: In San Diego, 119 gifted secondary students were interviewed to obtain their recommendations for academic program change. Generally, these students preferred: (a) more freedom in course selection and more emphasis upon a general education philosophy; (b) French, German, humanities, creative writing, general mathematics, chemistry, physics, psychology, and economics courses; (c) more intellectual criticism and discussion of controversial issues; (d) more recognition for their work; and (e) some type of selective academic segregation. It is suggested that other school districts conduct similar interviews to aid them in program planning.

SINCE 1948, the San Diego Unified School District has developed diversified and exemplary programs for mentally gifted students. Periodic assessment of the special scholastic problems and needs of students with IQ scores in excess of 150 has resulted in the establishment of such experimental programs as ungraded classes in the elementary schools and special groupings and seminars in the high schools. The survey described here is but one of an ongoing process of program evaluation.

This study included 119 junior and senior high school students who were interviewed to gather their opinions and recommendations for changes in their current academic programs. Essentially, these students were asked open ended questions with the following purposes:

1. To ascertain the way in which they would design their own courses of study.
2. To contrast existing curriculum offerings with their ambitions, interests, and aspirations.
3. To discover whether or not students are afforded sufficient opportunity to think.

4. To assess current outlets for creative and intellectual expression.
5. To answer a number of controversial questions, e.g., Do gifted students prefer to be in segregated classes?

Procedure

Student interviews were conducted by a state consultant utilizing a prearranged list of discussion questions. A district consultant acted as recorder with occasional administrative personnel attending some of the sessions as objective observers. Students were invited to submit written answers to supplement the oral interviews; approximately 75 percent of the 119 students submitted some sort of written contribution which was considered in the overall compilation of the findings.

As the findings were compiled, an attempt was made to distinguish between the responses of gifted (Binet IQ scores between 130 and 154) versus highly gifted (Binet IQ scores over 155) students, boys versus girls, and junior high versus senior high students. However, responses

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among these groups tended to be consistent. Exceptions are noted in the results.

Objective measurements of course choice and philosophy of education were obtained by administering specially prepared sets of checklists. The Checklist for Academic Course Choices was empirically structured from lists of courses offered by all high schools in California. This checklist included any academic course actually being offered by any high school in California. These courses were listed alphabetically. Students rated each course according to the following criteria: (a) whether or not their high school should offer it, (b) whether or not they would take the course, and (c) how they estimated its value in comparison with that of other courses.

The Checklist of Possible Purposes for Your School was directly adapted from an earlier checklist used to study junior college students (Rice, 1961). Gifted students rated and ranked 17 simply stated purposes for a school by the criterion of essentiality. This resulted in an hierarchical list of philosophical purposes which could be compared with similar lists made by college students and teachers.

In general, interviewers and objective observers agreed that these techniques resulted in an objective survey of the thinking and opinions of gifted secondary school students.

Selected Findings

Most of the following statements represent majority student opinion. Certain significant minority opinions or dissensions are mentioned where they are appropriate. The findings are reported by categories used in the interviews.

Given freedom, how would gifted students redesign their own curriculum? They would:

1. Demand more freedom in course selection.
2. Eliminate many of the physical education courses (boys and girls), home economics classes (girls), and shop courses (boys).
3. Place more emphasis upon literature, drama, art, and music.
4. Endorse the general education philosophy, yet make provisions for individual specialization by interest area.
5. Add more social sciences to the curriculum. (Early junior high school students differed

significantly from the rest of the group by scorning social studies.)

With all responses considered, the following composite word picture might describe the ideal program which gifted students would design for themselves. Their choices of courses, study times, and grade level placement would be flexible. Literally, each student would work at an intellectual level best suited to his individual learning needs. A culturally enriched and diversified curriculum of subject offerings would be about equally divided among the sciences, mathematics, fine arts, foreign languages, and the social sciences.

Students at the junior high school level would choose interdisciplinary seminars such as one which might relate the natural sciences to the social sciences. At the high school level, students would pursue subjects in great depth and to levels now construed to be higher education.

For the highly gifted student, there would be opportunity for advanced placement at any developmental level. Qualitatively different subject matter such as psychology or sociology would be introduced to them at the high school level. Periodic testing procedures would enable students to demonstrate mastery over fundamental subject areas in order to be placed in more appropriate content areas.

Thus, there would be two essential changes in the existing program: (a) flexible programming at all grade levels, and (b) qualitative content changes in subject matter, with more emphasis upon acculturation in subject matter treatment.

Among courses now available, what are the popular academic choices of gifted students?

In general, 75 percent or more of the students tended to choose the first courses listed; no course is listed unless 50 percent or more of the students selected it. The courses are presented in descending order of priority:

1. Foreign languages: French, German, Russian, Spanish, and Latin.
2. Language arts: humanities, creative writing, American literature, English literature, modern literature, and oral arts (debate or dramatics).
3. Mathematics: geometry, algebra, calculus, and trigonometry.
4. Science: chemistry, physics, and zoology.

5. Social sciences: psychology, American history, economics, international relations, and ancient history.

Do existing programs challenge students to aspire, think, and develop values?

1. Over 90 percent believed that the existing curricula were preparing them for college very well and constituted excellent general education programs.
2. Aspirations were not well defined at any level. Only 30 percent of the high school students had thought about a career. The highly gifted students were noted to be more decided concerning aspirations and career choices than the gifted.
3. Most students voiced the need for more open discussion in controversial areas.
4. Mathematics, English, and social science courses, in that order, were prominently mentioned by students as courses in which critical thinking was enhanced. Most students felt that teachers with adequate training were in a better position to "stimulate and motivate the thinking processes."
5. General criticism was expressed about the state textbooks. Also, teachers who "taught chiefly from the textbooks" were castigated. It was generally alleged that state textbooks "played down controversies, did not promote critical thinking and relied upon rote memory processes."

Are there sufficient outlets for creative and intellectual student products?

1. Almost unanimously, the students expressed various needs to create tangible products. A majority indicated that they had already produced some worthwhile product for which they could find no outlet for display, dissemination, or recognition. The product types ranged from practical inventions and many varieties of creative writing to musical and artistic compositions.
2. Outlets for science and literary products were rated as adequate. Such activities as the annual science fair were commended. However, in the literary field, potential authors complained that existing publications "systematically excluded controversial or avant-garde material."

3. Students criticized teachers' emphases upon "purely practical applications." Many felt that teachers "emphasized quantity as opposed to quality." In a constructive way, students felt that more emphasis should be placed upon "situations in which one might have time to think alone." They requested more independence from the school with "opportunities to create what we want as opposed to what the school wants."
4. As a special group, girls more keenly felt the lack of creative outlets and the lack of freedom of choice than did boys. Moreover, the problem appeared to become more acute as the students advanced in school. The girls complained about "culturally loaded determinations about the courses we should take." Also, a majority of the girls seemed to be unwilling to conform to such socially acceptable expectations as having "ladylike behavior or feminine interests."

Should students with different abilities be in classes together or should they be separate?

1. All groups overwhelmingly favored some sort of segregation of gifted students for selected activities. However, marked differences between gifted (Binet IQ scores between 130 and 154) and highly gifted (Binet IQ scores over 155) students were noted.
2. The highly gifted almost unanimously requested completely separate education.
3. There was far more difference of opinion among the gifted students. The majority felt that some separation was necessary, and most felt the need for separate advanced subjects, such as mathematics. However, the majority of these students wanted to retain egalitarian social contacts.
4. The highly gifted were not impressed by the social motive; they tended to reject the notion that they ought to be of assistance to students with lesser ability. The highly gifted freely discussed their intellectual prowess and felt that their extreme difference in comparison with other students warranted extreme differences in the educational provisions they ought to obtain.
5. All groups mentioned selected acceleration procedures as appropriate means of offering gifted students opportunities to obtain ad-

vanced work. Most felt that acceleration should be based upon a subject by subject review of capabilities. Junior high school students tended to favor segregated and accelerated classes based upon ability in most subject matter areas. High school students emphasized the need for individualized programs that cut across high school and college level subjects.

What do gifted students deem to be essential purposes for their high school? Ranked in the order of essentiality and priority, gifted high school students would state the philosophical purposes for their high schools as follows:

1. It provides preparation for formal education.
2. It emphasizes the use of the intellect and promotes critical thinking.
3. It promotes social development and maturity.
4. It helps the student develop and appreciate creativity.
5. It helps the student to realistically choose his life's work.
6. It provides academic counseling and guidance.
7. It promotes self understanding and good mental health habits.
8. It teaches basic skills for everyday living.
9. It provides general orientation and guidance programs.
10. It helps develop sound moral and spiritual values.
11. It provides help for the student in solving personal adjustment problems.
12. It promotes the development of aesthetic skills and appreciation.
13. It promotes the democratic way of life.
14. It provides specific vocational education.
15. It prepares young people for homemaking and family life.
16. It promotes international understanding and peace.
17. It provides a program of adult education beyond high school.

Roughly, the first nine priorities listed above received at least a majority endorsement by the gifted students. Proceeding from rank 10 through rank 17 their endorsement decreases;

for rank 17, only 20 percent (approximately) of gifted students agreed.

The configuration of purposes chosen by the gifted students in this sample resembled the configurations of priorities agreed upon by college and high school teachers and curriculum specialists (Rice, 1961). It is quite different from the typical statement of educational priorities made by junior college students, normal students, or school administrators. Typically, these latter groups place more emphasis upon such priorities as the democratic way of life, vocational education, and homemaking than do gifted students. In general, school administrators or normal students arrive at priority configurations approximately the reverse of those outlined above for gifted students.

Conclusions and Recommendations

It has been shown that gifted students are capable of providing meaningful insights about the nature of their educational programs. Moreover, gifted students represent an essentially untapped reservoir of imaginative suggestions for program innovation and change. Inspection of their opinions reveals a close resemblance to suggestions made in the literature for programs for the gifted. Substantial unanimity was observed among the gifted concerning many basic questions about their education.

Based on these findings, the following suggestions might be considered by school districts that are planning programs for the gifted:

1. Create special groups of gifted students who would meet during the school day to study curricula including special activities as well as accelerated content.
2. Carefully assess the needs of the local gifted population.
3. Utilize more psychometric data, such as achievement test scores, for the proper scholastic placement of gifted students.
4. Provide special counseling and interview services for the study and treatment of developmental problems which appear as attitudinal disparities among subgroups of the gifted and apparently disturb them just as frequently as any other student group.
5. Establish seminar settings in which contro-

versal issues and problems may be discussed, clarified, and analyzed for value.

6. Reevaluate the worth of nonacademic activities such as physical education in consideration of the true needs of the gifted.

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Creativity and Intelligence: Research Implications for Equal Emphasis in High School

Abstract: The possible relationships among creativity, intelligence, and self actualization were examined in 208 high school students to determine whether or not consistent self actualization scores existed for subjects high in the first two variables. Students high in both creativity and intelligence had significantly higher scores in self actualization than those obtained by students high in either creativity or intelligence. No significant difference in self actualization was found between students high in creativity only and those high in intelligence only. The results were interpreted as indicating that educational systems should stress both intellectual and creative abilities to achieve the highest level of psychological well being in students.

HOW best to prepare students for productive living is a long standing concern of education. Intelligence is only a partial predictor of later outstanding success (Cattell & Butcher, 1968). It is even possible to question the validity of using success as an appropriate criterion of curriculum assessment (Neill, 1960). An alternative proposal derived from self actualization theory implies that the ultimate goal of every curriculum should be a facilitation of the natural striving of each student toward his highest potential level of uniqueness, autonomy, and self fulfillment. According to certain of these theorists (Fromm, 1959; Goldstein, 1939; Maslow, 1962; May, 1959; Rogers, 1961), the fulfill-

ment of the self actualization drive entails psychological health, a necessary condition of creativity. An examination of this theoretical relationship between self actualization and creativity, as well as the relationship between self actualization and intelligence, in high school students is the basis of this study.

Studies on adults have revealed that a positive relationship exists between creativity and mental health. This finding, consistent over various measures, has been obtained with creative scientists (Arnold, 1962; Blatt, 1964), architects (MacKinnon, 1963), artists (Drevdahl & Cattell, 1958), writers (Barron, 1963), general creative individuals (Roe, 1963), and college students (Gerber, 1965). These adult populations, however, were not necessarily representative of high school students in terms of relative levels of intelligence, creativity, and positive mental health. Furthermore, no study has attempted to compare the relationship of self actualization to creativity and intelligence in high school students. Therefore, the present study was designed to test the following general hypotheses: (a) there

VERNON J. DAMM is Project Director, US Public Health Service Grant for Curriculum Development, School of Nursing, University of Portland Oregon. The research reported herein was supported in part by funds under National Science Foundation Grant No. GP5769.

From *Exceptional Children*, April 1970, pp. 585-589. Copyright © 1970 The Council for Exceptional Children.

exists a positive relationship between self actualization and creativity; (b) self actualization is more closely related to creativity than to intelligence.

Method

Instruments

The independent variables, intelligence and creativity, were measured by the California Test of Mental Maturity and the Remote Associates Test and the Biographical Information Inventory, respectively. The dependent variable, self actualization, was measured by the Personal Orientation Inventory.

California Test of Mental Maturity (CTMM). The CTMM, designed to correlate with the Stanford Binet Test of Intelligence is described by its originators (Sullivan, Clark, & Tiegs, 1957) as an instrument for appraising mental development or mental capacity. The instrument is a group test consisting of 12 subtests yielding language and nonlanguage scores which are averaged to give either a total mental age or a total intelligence quotient. The total intelligence score was the only measure used in this study.

Remote Associates Test (RAT). The RAT is a group test developed by Mednick and Mednick (1967) to measure the ability to think creatively. The theoretical premise upon which this test was developed is that creative thinking depends upon the ability to form associative elements into new and useful combinations. The high school form of the test, consisting of 40 items, was used in this study.

Biographical Information Inventory (BII). The BII, developed by Taylor and Ellison (1964), consists of 300 multiple choice items which assess different facets of the subject's developmental history, parents' and family life, and academic background. The scale was validated and cross validated on high school students drawn from nine National Science Foundation supported summer science programs. The high school form of the scale was used in this study.

Personal Orientation Inventory (POI). The POI, designed by Shostrom (1966) to measure self actualization or positive mental health, is a group test consisting of 150 two

choice items which yield a profile of 12 scale categories of self actualization. Items for this test were developed from the research and theoretical formulations of writers with an orientation in humanistic, existential, or Gestalt therapy psychology. Among the influential writers were Maslow (1962), May, Angel, and Ellenberger (1958), Perls (1947), and Rogers (1961).

Procedure

The subjects were 95 boys and 113 girls drawn from the entire student body of the Willamette High School of the Bethel School District, Eugene, Oregon.

The particular intelligence quotient chosen for a student was taken from the latest CTMM test performance score found in the student's permanent school record. No differentiation was made between the long form and the short form of the test. In the event that a student had not taken the CTMM, a Stanford Binet intelligence test quotient was substituted, when available from his permanent record. With the exception of the CTMM, all of the tests were administered during four 50 minute study hall periods by the study hall teacher.

Rather than using the 12 scales of the POI separately, since they contain many overlapping items, one scale was developed to reflect an overall measure of self actualization. According to Shostrom (1966), "self actualized groups are significantly higher on all scales and non self actualized groups tend to be lower on all scales [p. 21]." Therefore each raw score subscale distribution of the entire sample of students was converted to a standard score scale distribution; and for each student, the 12 standard score scale values representing the original raw score values were averaged to arrive at an overall measure of self actualization. These Total Overall Self Actualization Scale values will hereafter be referred to as POI values.

Results and Discussion

Analysis of Correlation Coefficients

A product moment correlation coefficient was computed for all sets of variables employed with the .01 level set as the criterion for sig-

TABLE 1
Correlation Matrix of All Scales Used

	<i>RAT</i>	<i>BII</i>	<i>POI</i>
CTMM	.33*	.12	.19*
RAT		.04	.19*
BII			.16

* Significant at the .01 level.

nificance. Table 1 is a matrix of these coefficients.

Examination of this table shows that the BII has little or nothing in common with the other scales. Two of the most meaningful coefficients are the .33 between RAT and CTMM and the .04 between BII and RAT. The latter coefficient shows that the two measures of creativity are not measuring a unitary trait. One difference in the domains of the two creativity scales is indicated by their relationships to CTMM. The RAT correlates significantly with CTMM, whereas the BII does not. The magnitude of difference between these coefficients is significant at the .05 level.

Hypothesis one. Creativity is significantly related to self actualization. The one significant correlation confirming this hypothesis is between RAT and POI, whereas it is not confirmed by the BII.

Analysis of Analyses of Variance

The sample was divided into four groups of independent students for each set of independent variable combinations: high intelligence-high creativity (IC), high intelligence-low creativity (Ic), low intelligence-high creativity (iC), and low intelligence-low creativity (ic). Since there were two combinations of independent variables (CTMM and RAT and CTMM and BII), two analyses of variance were required.

The criterion for the selection of the high intelligence group was an achieved intelligence quotient of 120 or better on the CTMM. This included 34 students in the present sample. All of the remaining students were placed in the low intelligence group. This criterion was selected on the finding (Barron, 1963; Torrance, 1962; Roe, 1963;

Yamamoto, 1964) that an intelligence quotient of 120 is an appropriate cut off point beyond which intelligence makes little difference in creative performance.

The criterion for the selection of the high creativity groups was the score on the respective creativity scale at or above the score containing the thirty-fourth student in the distribution of the entire sample of 208 students. For the RAT the high creativity group contained 41 students, and for the BII it contained 37. All of the remaining students were placed in the low creativity groups.

The result of the analysis of variance for CTMM and BII treatments was significant ($F = 3.27$, $df = 3/204$, $p < .05$), as was that for CTMM and RAT ($F = 2.99$, $df = 3/204$, $p < .05$).

The means, standard deviations, and number of students for the POI scale for each of these independent variable combinations (CTMM and RAT, and CTMM and BII) and for each independent variable combination group (IC, Ic, iC, ic) are recorded in Table 2.

The t ratios obtained from a comparison of the differences between the group means for each respective independent variable combination are recorded in Table 3. For all of these analyses the .05 level was accepted as the criterion of significance.

The IC, Ic, iC, and ic group means for the CTMM and RAT combination were .57, -.04, .03, and -.04, respectively, and for the CTMM and BII combination were .67, .03, .13, and -.06, respectively. Where significant differences occurred, they were all found to lie in

TABLE 2
Means, Standard Deviations, and Number of Subjects for POI Scale for Analysis of Variance Groups

<i>Independent variable combinations</i>	<i>Independent variable groups</i>			
	<i>IC</i>	<i>Ic</i>	<i>iC</i>	<i>ic</i>
CTMM & RAT				
N	11	23	30	144
Mean	.57	-.04	.03	-.04
SD	.71	.42	.54	.40
CTMM & BII				
N	7	27	30	144
Mean	.67	.03	.13	-.06
SD	.44	.53	.44	.41

TABLE 3

t Test Results of the POI Mean Differences for the Analysis of Variance

Independent variable combinations	Independent variable groups		
	Ic	iC	ic
CTMM & RAT	IC	2.50*	2.98*
	Ic		.37
	iC		.56
CTMM & BII	IC	2.29*	2.87*
	Ic		.58
	iC		1.48

* Significant at the .05 level.

the superiority of the IC group mean over another of the remaining group means. It was also found that in no case was another group mean significantly higher than any other group mean.

Hypothesis two. Students who are high in intelligence and creativity (IC) do not differ significantly in ego strength from students who are high in creativity only (iC). The hypothesis is partially confirmed by the lack of a significant *t* ratio for the CTMM and BII independent variable combination. This should be interpreted with reservation, however, since the IC and iC group means are .67 and .13, respectively, yielding a *t* ratio of 1.95 which approaches significance.

Hypothesis three. Students who are high in intelligence and creativity (IC) are significantly higher in ego strength than are students who are high in intelligence only (Ic). The hypothesis is confirmed by both independent variable combinations.

Hypothesis four. Students who are high in creativity only (iC) are significantly higher in ego strength than are students who are high in intelligence only (Ic).

For the analyses of variance the students were not divided according to sex because of the small numbers for the IC groups; for the CTMM and RAT independent variables there were 11 students, and for the CTMM and BII independent variables there were 7 students. However, it is very improbable that the significant *F* ratios resulted from differences contributed to by sex rather than by POI scale mean differences. The IC groups showed a superior POI score mean for both

male and female students for each combination of independent variables, ranging from .43 to .85; the means of all other groups (Ic, iC, ic) ranged from -.26 to .22. Also, the number of males to females differed by a maximum of two for each cell with the exception of the iC group for CTMM and RAT independent variables and the ic group for CTMM and BII independent variables. Furthermore, there was homogeneity of variance between male and female students for each independent variable group as well as between groups for the respective sexes and independent variable combinations.

Conclusions

An attempt was made to select two measures of creativity that were known to contain qualitatively different kinds of content material and were rated high when compared with other predictive devices. According to Taylor and Holland (1964), the RAT "appears to be a device of special promise [p. 36]," and "biographical items and past achievements are our most efficient predictors [p. 41]." Even with this in mind, Ghiselin (1963) claimed that "discrimination of the creative from the uncreative, and the most creative from the less, remains hardly better than guess work [p. 30]." Until the criterion problem is solved, there will be no criteria against which other measures of creativity can be validated.

One possible explanation for the lack of more substantial confirmation of a positive relationship between self actualization and creativity in this study may relate to Barron's (1963) notion that internal creative processes do not necessarily manifest themselves in observable creative products or to Maslow's (1962) distinction between primary creativity, or self actualizing creativeness, and secondary creativity, or special talent creativeness. The self actualization theorists reported on here have developed a thesis of self actualizing creativity, while the operational definitions of creativity employed could be regarded as representing special talent creativity. It could well be that what a person *is* and what a person *does* should not be regarded as the same phenomenon. If the

behavioral manifestations of what one is are attenuated in any way by other factors, there will never be a unitary relationship between the two. Instead of calling both of these "creativity," it might be more appropriate to give them separate terms or else to accompany the common term with the appropriate descriptive modifier.

Summary

This study showed that the group of students who had obtained high scores on both intelligence and creativity were superior in self actualization to those who had obtained a high score on only intelligence or creativity or low scores on both intelligence and creativity. Therefore, if education has as its goal the productive self fulfillment of every student, the implication of this study is clear. Incorporated into the curriculum should be a development of both intellectual and creative abilities, rather than a concentration on one to the exclusion of the other.

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Developing Values in Gifted Children

Joseph J. Walker

■ During a recent conversation a colleague said he thought gifted classes should be concerned solely with the children's cognitive development. Activities in the affective area such as values clarification were unnecessary, he felt. He contended that if these students are indeed bright they will readily establish a well developed set of humanistic values.

A recent issue of *Time* (May, 1974) contained an article titled, "Cutthroat Pre-Meds." It discussed the various academ-

ic guerrilla warfare tactics employed by many pre-med students to gain admission into medical school. The tactics included lying, cheating, destruction of lab experiments, deviousness, and general unethical practices. The article ended with the statement, "Cutthroat medical students could well make cutthroat physicians."

In his book *When All the Laughter Died in Sorrow* (1972), the much troubled athlete Lance Rentzel tells us he was marked as a gifted child intellectually and musically before he finished second grade. One of the underlying themes in the book deals with the constant goading to compete which he received from his parents, siblings, teachers, coaches, and peers. Eventually this, along with other problems, caused him to suffer mental and emotional anguish.

The Vince Lombardi credo, "Winning isn't everything; it's the only thing," permeates much of American society. The need to compete and win is infused in even the smallest children. Competition may not be bad in itself, but when success becomes an obsession rather than a motivation, it must be challenged. A popular television show of the 1950's titled *Maverick* had a lead character who once said, "There are times when a man must rise above principle." Unfortunately, external pressures to succeed often force children, including the gifted, into internalizing this philosophy. This seems a disturbing lack of what Samples and Wohlford (1973) called "being values" for anyone in a democracy to hold dear. If gifted children, the potential leaders, implement this creed in their daily lives, the consequences will be serious, especially if one of them sits an arm's length from the red nuclear attack button.

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COOPERATION IN A COMPETITIVE SOCIETY

Dr. James J. Gallagher, in an address to administrators, board members, and parents attending a National Leadership Training Institute workshop for gifted program development, discussed a cooperative versus a competitive society. He equated both with a group of mountain climbers. He said that if a group of mountain climbers attempted to pull one member down to prevent him from being first to reach the pinnacle, as he fell the safety rope connecting them together would pull all into the abyss. But, if the group aided this climber in reaching the top, he could then assist the rest in their ascent.

One reason the idea of a cooperative society has been difficult to initiate in schools, as the *Time* article implies, is the rigid grading system existing in many of them. Educational experts for years have been attempting to arrive at equitable, nonthreatening, helpful methods of evaluating and reporting student performance (Syphers, 1972). It is interesting to note that in the *Instructional Climate in Illinois Gifted Classes* report (Steele, 1970), one of the nine major differences between gifted classes and average classes was that test-grade stress is not characteristic of gifted classes as a group, while it is characteristic of the average classes. Another difference listed is the fact that gifted classes, as compared with average classes, have greater opportunity for and involvement in discussion. These two features of a gifted class help provide the delivery system for allowing students to clarify and order their values.

One must accept the fact that both students and teachers have a set of values by which they operate. Teachers must be candid with students regarding their values, beliefs, and attitudes. This does not mean teachers should expect students to conform to or copy their values but means instead that teachers should question frequently but judge rarely (Lyon, 1971).

EXERCISES FOR AFFECTIVE BEHAVIOR

There are many activities available in current publications which teachers of the gifted can use to incorporate affective exercises, including values clarification, into their regular class routine. George Isaac Brown in his book *Human Teaching for Human Learning* (1971) presented the concept of confluent education. Confluent education is the integration of the cognitive and affective elements in group and individual learning. In his book, Brown presented ways in which confluent educational activities can be employed in the regular school program. For example, Brown mentioned a secondary school activity titled "Animal Fantasy" as a stimulus for students to discuss their feelings about themselves and others and to decide why they feel as they do. The students write the name of a person they dislike on a sheet of paper, the name of someone they like on a second sheet, and their own name on a third sheet. They then write the name of an animal this person most closely resembles. They affix a descriptive adjective before each animal and share them with the group for trait comparisons and discussion.

Although the real names are not shared with the group, the introspection of both the reader and listener is interesting to observe. Sometimes after discussion with the group an individual will realize that his choice was a prejudicial one or was based on some minor external characteristic of an individual.

Next, the students imagine what would happen if they were in a forest and met the despised animal, the loved animal, and the animal they feel most akin to. They write their own endings to these open ended activities and again share and discuss them with the group. Not only are activities like this valuable opportunities in values clarification for both teacher and student, but they also involve creative listening and writing,

good discussion techniques, and a lead-in to other language arts studies and activities.

Other such suggestions are also found in Jeffrey Schrank's book *Teaching Human Beings* (1972). One dealing with competition appears in his chapter titled "Hidden Assumptions." It is a simulation game called "Score as Much as Possible." Four teams of two (a total number of eight participants) play the game together. Ten rounds are played during which each team bids an X or Y to accumulate points. The points won or lost by a team are tabulated according to the established scoring system. For instance, if one team bids an X and the other three teams bid Y's, the team bidding X would win 3 points and the teams bidding Y would each lose 1 point. Or, if each team bids a Y, they would all win 1 point.

At intervals throughout the game, teams are allowed to consult with the other teams to decide how each team might better score points. At no time before or during the playing of the game are the groups instructed to compete or cooperate. During the number of times I have used this game with both adolescents and adults the "killer instinct" has emerged from at least one and usually several of the teams. They will agree to bid a certain letter during the next round to help the other teams score more points, and then they will renege on their agreement during the playing of that round. Although total group consultation is allowed only during certain rounds, some teams will attempt to control the bidding through side comments to other teams when they think the game director is not watching. Other ploys are also used by teams to assure their victory.

The playing of this game generally opens the group to discussion of the value of competition versus cooperation, how the techniques employed during the game apply to life, how school and society would differ if they were based on cooperation rather than competition,

and a myriad of other topics for discussion and further study. This game, along with Schrank's other suggestions, seems most appropriate for gifted junior and senior high school students, although a teacher of the gifted can adapt them to a lower level.

A PROBLEM SOLVING ACTIVITY

"Lutts and Mipps," found in *Structured Experiences for Human Relations Training*, Volume 2. (Pfeiffer & Jones, 1971), is a problem solving activity designed to study the sharing of information in task oriented groups, focus on cooperation in group problem solving, and observe leadership behavior in groups. This activity is excellent for involving students in the above mentioned processes. It is also useful in tracing the activity through Guilford's Structure of the Intellect because it includes many of the contents, operations, and product cells of that model. "Lutts and Mipps" fits readily into a junior or senior high mathematics class. It consists of translating nonsense words into distance, time, and rate of speed. Each member of a group of 6 to 12 participants is randomly assigned several cards with some of the 26 statements necessary to solve the problem printed on them. (For instance, "It is 8 lutts from A to B" or "A wor is 5 mirs.") No member of the group has sufficient information to solve the problem alone. Participants may verbally share information, but they may not share or exchange their cards.

After solution of the problem, discussion ensues. Students discuss the cooperation and competition, if any, that took place in the group, leadership behavior that was exhibited, individually or group enforced isolation of members, and other affective topics of interest to the students. Graduate students who have used this with their students have reported that the results are enlightening to all involved.

ENCOURAGING CREATIVITY

An activity which works well at the junior and senior high level is named after two comic strip characters by Thaves, "Frank and Ernest." It is based on Frank E. Williams' model for encouraging creativity in the classroom as found in his Total Creativity Program kit. "Frank and Ernest" is a one panel comic strip appearing in Atlanta's local newspaper. By covering the dialogue with white construction paper, only the pictures remain. The students, in groups, are asked to come up with as many ideas as possible concerning what the picture represents to them. After completion of this task, they decide which of the ideas best relates to the picture, and they then develop a clever dialogue to support the depicted situation. This activity employs several of the 18 teacher behaviors from Williams' model and results in both cognitive and affective creative student behavior. This activity can be conducted with magazine advertisements, book jackets, or anything else an innovative teacher of the gifted finds useful.

Other topics including death, narcotics, abortion, and euthanasia are being intelligently studied and discussed by gifted adolescents in classes I have visited throughout the country. Many of the topics handled, although requiring a high level of intelligence to discuss thoroughly and objectively, also deal with the values of both teacher and students.

DOING YOUR BEST; HURTING NO ONE

The above activities contain some ideas teachers may wish to investigate for possible classroom use with gifted students. Values clarification activities directed toward the elementary school level are also available. Two series I find interesting are *Dimensions of Personality* (Pflaum/Standard, 1969) and *The Most Important Person* (Encyclopaedia Britannica Educational Corporation, 1969).

If gifted students are given an opportunity in school—perhaps the only opportunity they will ever have—to clarify and order their values, they hopefully will not emulate the philosophy of a talented and famous actor who said, "Success is when you're doing better than your best friend." Rather, they may adopt the philosophy, "Success is when I'm doing the best I can at the detriment or expense of no one."

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VII. A Look at Some Programs

Introduction

Some of the most enjoyable moments of our work occur while we are out in the schools visiting gifted programs. The enthusiastic faces, the close working relationships, and the exemplary accomplishments of the students are a delight to behold. The existence of such programs reinforces what we know schools can and should be doing with their gifted and talented youth. During one of these visits, several questions occurred to us that seem worthy of further investigation. They are: If the teacher were to leave, would the program's basic design be left to the whim of his or her replacement? If so, is there—or should there be—a way to keep the integrity of a program despite its changing staff? And if it is important and possible to uphold the basic structure of a program regardless of who is implementing it, what steps should be taken to assure that this is done? This introduction will serve as a forum for further discussion of these questions.

All too often, truly outstanding programs are designed, created, and directed by a dedicated and innovative individual only to dissolve just months after that individual leaves. First, some explanations as to why the program was so successful when the person was there are in order. One explanation is that the director of the program held a vested interest in its success. Having created, fought for, and nurtured the project through its growing stages, he or she had developed a strong sense of ownership. This commitment to the program from its inception can add considerably to one's desire for its successful implementation. Another explanation is that the design of the program fit well within the director's own teaching style. If the program developer was a firm believer in documentation, he or she may have used anecdotal records as an important component for reassessment of student educational plans. While this may have met the program designer's needs perfectly, it might be seen as too time consuming or subjective to someone else. In this and many other ways, the program was designed with one person's own philosophy and teaching style as its base; hence it worked. One other explanation for the program's success might be the magnetic and charismatic personality of its creator. While it is difficult to assess the extent to which this factor determines the success of a program, our own instincts and observations tell us the teacher's personality is a crucial factor.

Having looked at some possible explanations for the initial success of a program, we are tempted to suggest that anyone who wants to teach in a program must first design and develop it. While this is neither feasible nor practical, such a policy would insure that at least the first two criteria—commitment and suitability of teaching style—were satisfied. Since, however, we cannot (nor would we want to) enforce such a procedure, some discussion seems appropriate about what a program director can do while he or she is developing the program and during the transition period.

The easiest part of the program to duplicate or train someone to handle is the administrative duties. Anyone can go to the appropriate rooms at the proper times, pick up the right students, and keep them in the resource room for the designated period of time. The difficult part comes in capturing for someone the essence of the learning environment that is an essential component of the program. While there are no surefire strategies for transmitting to an outsider that special atmosphere so unique to the program, extensive documentation can do much to recreate the setting.

Documentation can take many forms and can serve more than one purpose. It can be used as evaluative criteria and/or as inservice materials and can provide many opportunities to develop public awareness. Documentation can include files of creativity or higher level learning activities, files of individual students, well written plan books, a file box of resource people, photo albums, slides and films of classroom activities or special outings, a teacher's daily log, and so forth. While many of these records are kept as a matter of course, if they were kept with the intent of being used to help someone understand how the program operates, they would be of great assistance to the incoming teacher. Ideally, the newcomer should spend a minimum of several weeks

in the classroom with the original teacher before taking on the program, but when this is not possible, the materials left behind must be designed to orient the new teacher.

While documentation plays an important role in every classroom, the resource room has an even greater need for it because of its unique purpose and design. If programs for the gifted are going to stand the test of time, they will also have to stand the test of changing staff. To do so will require a conscious effort on the part of their creators. The articles that follow provide another good way of documenting programs that are worth preserving. In the first article, Lake describes The Exploration Scholarship Program. Funded entirely by private sources, this program selects some 150 gifted and talented students from all strata of society to take part in a 1 to 8 week science expedition on one of the specially chosen sites around the world. Appropriately titled, "The Classroom Is the World" is a fascinating discussion of a stellar program.

Karnes and Bertschi discuss a federal project whose goal was to design and demonstrate models for "Identifying and Educating Gifted/Talented Nonhandicapped and Handicapped Preschoolers." The article describes one of the two First Chance Projects developed and includes both the theoretical rationale and some practical identification and programing procedures. "A Docent Program in Science for Gifted Elementary Pupils" presents a possible model for training highly able fifth graders to serve as museum guides for small groups of their peers. Ryder includes in her basic description some of the broader goals of the program that extend beyond the expected academic achievement.

In Martinson, Hermanson, and Banks' article, four major components believed to be the factors leading to the success of "An Independent Study-Seminar Program for the Gifted" are presented. The examples of student projects and student reactions to the program are good indicators that the program is indeed successful.

Lazearne County, Pennsylvania took on the task of "Challenging Gifted High School Seniors" by offering them the opportunity to add a college course to their regular high school curriculum. The administrative arrangements of such a program are carefully delineated, making this article particularly useful for someone interested in attempting a similar program.

In the final article, "Executive High School Internships," Hirsch outlines a program that provides learning and experience opportunities for gifted and talented students. These students are placed in top executive and administrative positions for a full semester while still earning academic credit. This program combines the best of both worlds by providing both career education and leadership training.

These articles on exemplary programs serve as a confirmation of the commitment to talent that is growing in our educational institutions today.

Their Classroom Is the World

Thomas P. Lake

■ The topic was "How I Spent My Summer Vacation." The compositions were far from typical. "Excavations in the Jordan Valley;" "Explorations of The Wind River Valley in Wyoming;" "Surveying the Flow of The Saint Elias Mountains Glaciers;" and "Understanding the People of Botswana in Africa" were among their titles.

No, it was not a typical classroom. No, these were not typical young people. Their classroom was the world and they were gifted and talented youth given the opportunity to explore their classroom.

GIVING THE GIFTED AN OPPORTUNITY

For the past two years, a consortium consisting of the Explorers Club, Educational Expeditions International of Belmont, Massachusetts, the Bureau of Indian Affairs, and the Model Cities Program, has enabled gifted and talented students to participate in scientific explorations. This year through the efforts of the 10 Regional US Offices of Education, 10,000 gifted and talented applicants were screened and 158 students from all strata of life went on expeditions of from one to eight weeks. They traveled and explored Africa, the Middle East, Europe, Asia, South and Central America, Iceland, and the United States. The project is called The Exploration Scholarship Program.

The scholarship program is not financed by the Office of Education. Rather, it is supported entirely by private funding with the Office of Education's Office for the Gifted and Talented as the chief advocate. Basically, this program is an on the job training and apprenticeship opportunity for gifted students. It provides experiences which ordinarily do not occur in the classroom.

PICKING THE BEST

From each of the 10 Regional US Offices of Education 15 semi-finalists were chosen. The selection boards in each region consisted of university presidents, chief state school officers, educators, and explorers. These 150 students were further screened by a national selection committee which included some expedition leaders, and awards were given in various areas.

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First, in the national competition where there were 10,000 applicants, 25 students received full scholarships from their homes to the expedition site and back. In addition, there were 18 partial scholarships awarded.

The second category was a separate competitive program using the same application material. This category was the Indian competition financed by the Bureau of Indian Affairs. There were 13 winners in this area representing Indian students from across the United States.

The third area of competition was a special competition in the model cities neighborhoods. Sixteen model cities neighborhoods collected \$49,000 and used the same application format as in the first two categories to select their brightest and best. Forty-nine inner city youth won.

The final two categories were financed and conducted by the Explorers Club. The first category involved the Boy Scouts of America where 12 explorer scouts were chosen in their own competition. The Explorers Club, in addition, presented 40 expedition scholarships of their own. The grand total: 158 full and partial scholarships for gifted and talented young people.

HOW IT ALL BEGAN

It is interesting to see how this scholarship program for the gifted and talented has grown in the few years that it has been in existence. In the first year, 1972, Harold Lyon, Director of the Office of Gifted and Talented, was approached by two non-profit organizations, the Explorers Club and Educational Expeditions International, both with extensive experience in worldwide scientific exploration. As word passed along, attention was brought to a private organization in New York City. This particular foundation has an interest in the development of gifted and talented students and wanted to see the program expanded. A grant was made to insure that proper materials be developed, and so that the program could be appropriately structured and administered in years to come. In addition to this, Robert Radford, a Regional Office of Education Coordinator of the Model Cities Program, heard what the scholarship program was offering and arranged for Model Cities students to participate.

COMMUNITY COMMITMENT

The application forms found their way to various school districts, communities, high schools, and colleges, whose administrators and teachers then passed them on to capable young students. And so there was selection or self-selection at the grass roots level. The applications were then reviewed by regional selection committees. University presidents, commissioners, city managers, principals of high schools, and a great number of distinguished citizens came forward on call from

their communities. These people gave up part of their time in response to the call for selecting exceptionally bright students. This community involvement is another encouraging aspect of the program.

HOW THE PROCESS WORKS

Perhaps a brief look at the contributing exploration groups may give some indication of what a scholarship winner has to look forward to. Both Educational Expeditions International and the Explorers Club are nonprofit groups which act as clearinghouses for scientists by providing logistical support and manpower in order to underwrite their research projects in the field. A variety of resources provide funding to manage the expeditions, and to select a profile of participants whose collective skills and academic backgrounds and enthusiasm can make the projects work. These expeditions are working experiences, not designed primarily for educational purposes, but rather designed to meet the needs and requirements of the scientific community.

The expeditions cover many scientific research disciplines: geology, volcanology, marine and terrestrial biology, anthropology, and so on. In past years, these organizations have placed on their expeditions young scholars whom they feel have high aptitudes for creativity and achievement in the sciences. In recent years, the expeditions have included gifted and talented youngsters; the great majority of the participants on these expeditions, however, are professionals who range in age from 25 to 60 years old. This affords the gifted and talented student the opportunity to interact and to learn from people who have had experience in exploration.

THE SCIENTISTS' REACTIONS

Two EEI representatives recently returned from their 1973 expeditions and expressed extremely positive reactions to their work with the gifted and talented students. For example, this year EEI established a special scholarship expedition section for those students interested in Marine Biology. This expedition had seven scholarship students, some from the Model Cities program, who spent 2 weeks at Pleasant Bay on Cape Cod. Bill Sargeant, a marine biologist with a degree in international law, was the assistant scientist for this expedition. He explains the experience in this way.

We were looking at some of the effects of DDT on some of the crustacea in the area . . . and we found that the Bay is recovering from the use of DDT which they stopped using about 5 years ago. We ran a laboratory experience different from what these students had been used to. They were treated as graduate students, where they were responsible for a lot of self-initiation. The students selected one animal that they would study. They were free to go and collect their own samples, and were responsible for designing their own experiments to discover what they could about feeding, breeding, and swimming behavior.

Mr. Sargeant remarked that he probably learned more from the students than they did from him. He found the students congenial and able in picking up things quickly, and that their naivete about the animal-life only added to the excitement of discovery.

Mr. Steven Seay, a teacher of earth science from St. Mark's School in Dallas, Texas, had just returned from an expedition to Iceland led by Dr. Ian Gibson of Bedford College. All the students on this expedition were gifted and talented scholarship winners. Mr. Seay said that everyone had an incredible experience, though some would not realize it to the fullest extent until they return to the US. He felt the students grew in several ways, the first being intellectual growth. They learned much geology and also improved their hiking and camping skills considerably. Equally important, he felt that the students gained valuable personal growth, and a renewed appreciation for their life in the United States because of their experience in a foreign culture. They seemed to emerge with a new value system enhanced by their field expedition experiences.

The experience, he went on, established a scientific comradery where interaction between the young and the more experienced was an everyday occurrence. It was a simple thing to understand: the more each person put into it, the more they all benefited. "There we were," he said, "hiking up and down the Fiords of Iceland—the mountains and the glaciers—actually experiencing the geological formations as they are, not as they are presented in some abstract concept in a textbook."

Mr. Seay was especially enthusiastic about the scholarship program's availability at a critical time in these young people's lives. "The experience gives them direction which they might not otherwise have during their high school or even college years."

"I WOULDN'T TAKE IT BACK FOR THE WORLD!"

The importance of the scholarship program can only be measured by its effect on the students involved. The following statements, excerpted from the *Explorers Journal* of December, 1972, speak of a measured success:

■ "With Chisel, Hammer, and Pick" (Exploration to 'Ubeidiya, Jordan Valley)

Rebecca Lynn Miller, aged 18, Richardson, Texas.

Everything had crystallized in my mind concerning the goals which the scientists of prehistory had achieved in the Near East and those which they were still working towards. Then too, I realized that I wanted to join them in their efforts as I had done this summer. Therefore, I am now structuring my studies toward a degree in either anthropology or Near Eastern archeology. I can only hope that my education in a college

situation will be as rewarding as the priceless wealth of knowledge and educational experience which I have gained in my all too short visit with prehistoric man at Ubeidiya.

■ **Untitled** (Exploration of the Wind River Wilderness)

Greg Smith, sophomore in premedicine, University of Illinois.

It is popular today to be against structured society and technology, and it is true that both have caused some problems. But I have lived without technology, or at least partially without, and it has helped me put man in perspective. I can imagine what life was like a century ago, and I feel lucky to have what I have today. I can appreciate that a car can get you in 10 minutes to a place that would ordinarily take a half day to reach on foot. I will always remember how I felt the first time I went to a restaurant upon our return. The waitress walked to our table, handed us each a list of all the foods that we could have for the asking, and gave us each a glass full of fresh ice water. My appreciation of these things had been greatly enhanced during our enlightening expedition in the wilderness.

■ **"A Lapse of Time"** (Exploration down the Okavango River, Africa)

Anita Valerio, aged 15, Denver, Colorado

My overall experience on this expedition was a positive one. I gained an insight into a primitive society, one I could never have gained from a textbook. As I look back I realize I grew upward and outward enormously in those three or so weeks; I wouldn't take it back for the world!

COMMENT

■ *The author expresses personal thanks to the staff of Educational Explorations International of Belmont, and the Explorers Club of New York for providing information and visuals.*

■ *If you are an educator or parent of an exceptionally gifted child, you may write to your Regional US Office of Education for application forms and additional information about the Exploration Scholarship Program.*

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Identifying and Educating Gifted/Talented Nonhandicapped and Handicapped Preschoolers

MERLE B. KARNES
JANE D. BERTSCHI

At age 3, Billy's speech was totally unintelligible. Consequently, he had great difficulty communicating with other children and his usual means of interaction was to strike or grab them. However, Billy also clearly demonstrated superior psychomotor ability; he displayed unusual strength and markedly advanced motor skill development. His severe speech and language delay and related behavior problems coupled with outstanding motor skill development qualified Billy for placement in the RPYHT program for talented handicapped preschool children.

RPYHT Open Classroom teachers set goals for Billy that would foster his motoric talent as well as improve his speech and social behavior. The teachers provided Billy with many and varied opportunities for movement and motor activities and suggested that other children ask Billy for help with tasks that called for particular strength or skill. The teachers also set strategies for dealing with his social behavior and, in addition, Billy received speech therapy from a specialist.

As Billy helped other children and began to realize how much he could do, his self image grew. Interaction with others helped him to develop social skills which, in turn, provided more natural opportunities to speak. All these played a part in giving Billy more confidence in speaking and in social interactions, as well as in providing opportunities to practice and further develop motor skills. By the end of his second year in the project, Billy was speaking in sentences appropriate to his age level, his behavior had dramatically improved, and he continued to make gains in psychomotoric development.

Gifted preschoolers (ages 3 to 5) have often been overlooked in educational planning. Even more neglected have been handicapped children in that age group who are also gifted. In 1975, however, the Bureau of Education for the Handicapped (BEH) funded two First Chance Projects to develop and demonstrate models for identifying young gifted and talented children and programming for them. One project is located in the public schools of Chapel Hill, North Carolina; the other, in the Institute for Child Behavior and Development at the University of Illinois, Champaign-Urbana Campus. The latter program referred to as RPYHT* (the Retrieval and Acceleration of Promising Young Handicapped and Talented) is part of the Joint Early Education Program for the Handicapped (JEEPH), an early childhood program for the handicapped based on a joint agreement among 15 rural Champaign County school districts, the Champaign County Educational Service Region Office, and the University of Illinois. Only the RPYHT program, however, will be discussed in detail in this article.

THE RPYHT PROGRAM

It was essential at the outset that the RPYHT staff have a clear understanding of who was to constitute the gifted and talented handicapped population. Determining the characteristics of the handicapped presented the lesser problem since programs for young handicapped children had been in existence at the University of Illinois for several years and since Illinois state guidelines had already been formulated. For the purpose of the project, however, the handicapped child was defined as one whose full development was impaired through physical, social, emotional, and/or learning deficits. The term *gifted* is usually applied to the child with extraordinary academic, verbal, and/or intellectual abilities. The term *talented* usually refers to children who are socially, artistically, or physically gifted. In RPYHT, however, the term *talented* covers six areas of function: intellectual, academic (reading, math, science), creative, social (leadership), artistic (art, music), and psychomotoric.

Obviously, the first step in establishing an educational program for the gifted handicapped preschooler was to identify the target population. Then, educators faced a second challenge: how best to nurture those talents so that the gifted child—whether handicapped or not—might achieve his or her potential. This article, then, begins with a discussion of how the gifted and talented handicapped child may be identified (similar procedures can be followed in identifying the gifted and talented nonhandicapped) and concludes by outlining two approaches for educating these young children.

IDENTIFICATION OF THE GIFTED/TALENTED HANDICAPPED

Identification of gifted and talented handicapped children is a complex process that begins when children are screened and evaluated for placement in a preschool special education program and continues throughout the intervention period. So extended a procedure is necessary because the talents of the handicapped child are often obscured by conditions relating to his or her handi-

*Funded by the Bureau of Education for the Handicapped (BEH), DHEW, Grant Number G007500232, since 1975.

The project presented or reported herein was performed pursuant to a Grant from the US Office of Education, Department of Health, Education, and Welfare. However, the opinions expressed herein do not necessarily reflect the position or policy of the US Office of Education, and no official endorsement by the US Office of Education should be inferred.

caps and may not be recognized during initial diagnosis. Later, however, hidden talents may emerge after the child has spent several weeks or months in an intervention program. Thus, the RAPHYHT approach to identification consists of two parts: procedures implemented as part of a screening and diagnostic process used to identify children who are eligible for a preschool special education program, and procedures employed with children already enrolled in an intervention program.

Location, Screening, and Assessment Prior to Placement in the Program

Location of children to be screened in the JEEPH communities relies on a variety of techniques including lists generated by local school principals, media announcements, flyers sent home with children in school, and a telephone census. Location activities in a given school district vary according to the size of the district, the mobility of its population, and the policy of its administration.

Children located in the 15 school districts are then screened using the Comprehensive Identification Process or CIP (Zehrbach, 1975) to detect behavior that suggests developmental delays in one or more of eight areas—cognitive, speech and language, fine motor, gross motor, vision, hearing, medical history, and socio-affective. The primary objective of this screening is to identify potentially handicapped children; however, information obtained from parent reports or observation of children during screening activities that suggests potential talent is noted. For example, the CIP Parent Interview Form includes questions about special talents that may be displayed by the child, advanced vocabulary and expressive language, the child's special interests, and social skills, all of which may produce information suggestive of talent. Children selected during the screening process are then referred for detailed study by a diagnostic team consisting of a psychologist, a speech clinician, and a social worker.

Diagnostic procedures include a battery of standardized instruments. Members of the interdisciplinary team are alert to characteristics that may indicate talent in one or more of six areas (intellectual, academic, creative, leadership, visual and performing arts, and psychomotor). Information gathered by the diagnostic

team is presented at a staff meeting where placement eligibility is determined. Consensus as to whether each handicapped child is is potentially and functionally talented is also determined at this time. Such children, with parental consent, are placed directly in a RAPHYHT demonstration classroom.

Observation of Children after Admission to the Program

Not all gifted or talented children are identified at the diagnostic stage. Some emerge only after they have been in a program that remediated their handicaps to the extent that their behavior began to suggest talent. RAPHYHT staff, with the assistance of faculty at the University of Illinois and advisory board members, devised talent checklists to evaluate the six previously listed areas of talent on the basis of teacher ratings. Of characteristics found to be associated with each area of talent, 7 to 10 were selected and stated in terms of behaviors that could be observed in the 3 to 5 year old child. To conduct a classroom screening using the talent checklists, the teacher studies the items for each area of talent, observes the children in the classroom, and then rates each child's performance in relation to the items on the checklist. The Intellectual Talent Checklist in Figure 1 is an example of the types of items used and the rating procedures.

Specific criteria for selection of children for followup talent assessment are based on the checklist scores of a normative group of 194 preschool handicapped children. Cutoff scores were established at $1\frac{1}{2}$ standard deviations above the mean score of the normative group on each talent checklist. A followup of the children identified by the talent checklist involves three major steps:

1. **Teacher interview:** The purpose of the interview is to obtain general background information on the child and to validate the teacher's checklist responses by collecting specific anecdotal/observational data related to the child's potential talents. A Teacher Interview Report form has been developed to record this information as well as to structure the interview. At this stage, children may be screened out for a variety of reasons (e.g., lack of teacher information support-

FIGURE 1

INTELLECTUAL TALENT CHECKLIST

		A. Strongly agree		C. Neutral	
		B. Agree		D. Disagree	
				E. Strongly disagree	

Date: _____ Classroom: _____

Observer: _____

	Names and Ages of Children									
1. Is highly alert and observant.										
2. Demonstrates exceptional retention of material presented.										
3. Is very curious about a great variety of things.										
4. Is often absorbed in activity.										
5. Learns easily and readily.										
6. Conveys ideas exceptionally well.										
7. Demonstrates advanced ability to apply knowledge to practical situations.										
8. Knows about many things of which other children his or her age are unaware.										
9. Demonstrates advanced understanding of abstract relationships (e.g., cause and effect).										
10. Demonstrates exceptional ability to solve problems.										
Totals										

ing talent, child's age rather than talent accounting for high score).

2. *Individual child assessment.* This step involves a comprehensive assessment of the child's abilities using a variety of instruments and data sources, including parent interview, examination of historical records, standardized tests, and structured observations of the child in a variety of settings. Specific procedures vary according to the area of talent under investigation.
3. *Consultation and trial programing.* Because a child's handicap(s) may obscure expression of talent and because assessment methods may not fully reveal abilities, talent programing and prolonged observation are often necessary before definite diagnosis is possible. Teachers, therefore, consult with dissemination specialists regarding talent development activities to use in their classrooms in order to provide opportunities for selected children to express potential talents. Figure 2 presents a flow chart that summarizes the followup of talented handicapped preschoolers identified by the checklists.

TWO APPROACHES FOR EDUCATING GIFTED/TALENTED PRESCHOOLERS

The SOI and the Open Classroom

It is generally agreed that there is no single best approach for educating any group of children, and this tenet holds for the gifted as well. A major consideration may well be that the approach selected be compatible with the philosophy of the teacher. Of course, certain program components are essential if a program is to be judged exemplary (Karnes & Lee, in press). Nevertheless, a model program may be built around radically different approaches for educating young gifted and talented children—particularly handicapped. RAPHYHT incorporated an open or informal approach as well as a structured, teacher directed approach based on an instructional model, Guilford's Structure of the Intellect (SOI).

Certain commonalities cut across the boundaries of each approach. In each, center based classes meet for 2½ hours in the morning. Each class is directed by a certified teacher in early childhood handicapped who has special training in the particular approach used in that classroom. Each head teacher is assigned a teacher aide with 30 hours of professional training. In addition,

teacher aides receive on the job training in the specific approach they are helping to implement. Family involvement is an integral part of each approach.

Both approaches incorporate classroom assessment procedures for determining developmental levels in critical areas. Both adhere to Public Law 94-142 in writing individualized education programs (IEP's) for each child in areas of deficit. In addition, IEP's are written in areas of strength. Periodic charting of the children's progress is required in both approaches. Special attention is given in each approach to challenging and motivating each child through individualized instruction and to avoiding holding any child back to the level of children with lesser abilities and talents.

Each approach relies on ancillary staff as part of the team that provides service to the child and his or her family. Team members vary according to the needs of a given child and, in addition to the head teacher and the teacher aide, may include a speech and language specialist, a psychologist, a social worker, and an occupational or physical therapist. Team members in each approach are committed to meeting the special needs of each gifted and talented handicapped or nonhandicapped child. Considerable effort is given to matching the child's stage of development with activities that provide opportunities to accelerate development as well as to pursue an area of talent in breadth.

Contrasting the Two Approaches

The differences between the two approaches are best understood by examining the performance of each in determining the following: theoretical base, curriculum, instructional methods and materials, child assessment, teacher role, teacher-child interactions, use of time, and use of space.

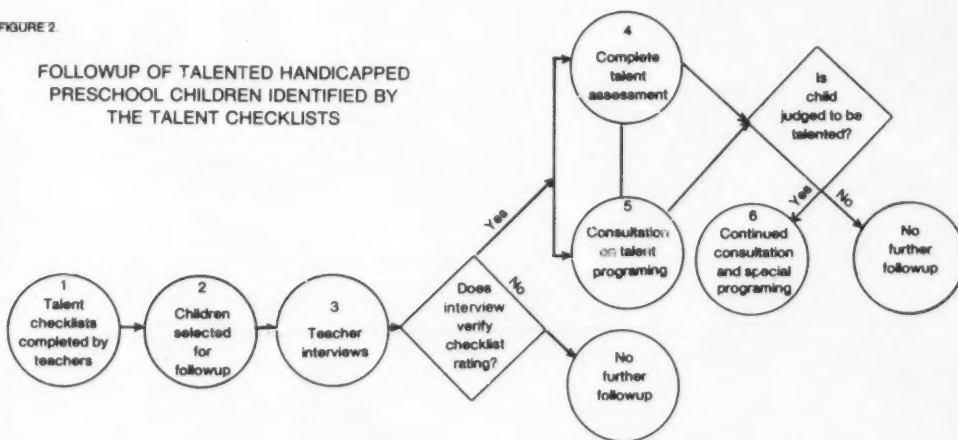
Theoretical Base

The Structure of Intellect approach assumes that children learn best when teachers provide sequenced activities based on individualized instructional objectives. The SOI model helps teachers stimulate a variety of intellectual abilities, including convergent, divergent, and evaluative thinking. The SOI model aids in programing for talent development as well as in the remediation of handicaps.

The Open Classroom assumes that children, with teacher help, are capable of determining the direction, scope, means, and pace of their education. The teacher helps children to acquire basic skills, the learning tools that will enable them to explore, observe, describe, and organize experience. It provides an environment that encourages and nurtures talent in children and also meets their special needs.

FIGURE 2.

FOLLOWUP OF TALENTED HANDICAPPED PRESCHOOL CHILDREN IDENTIFIED BY THE TALENT CHECKLISTS



Curriculum

SOI teachers rely on prepared curriculum and materials to plan lessons. They also use a game format to present math, language, and prereading lessons. Artistic and music activities are included in the daily plan. Children learn songs, use musical instruments, and participate in yoga, dance, and creative movement exercises. Teachers also plan lessons using talk sheets, puppets, and role plays that help children explore their feelings and learn appropriate social behavior.

In the Open Classroom children initiate their own learning activities. Instead of planning structured lessons, teachers attempt to extend or channel the child's activities in ways that integrate the learning of specific skills. Thus, teachers base instruction on their knowledge of each child and use the child's interests as a springboard to facilitate skill development. For example, if Billy is playing with his favorite animal, a gray rubber hippopotamus, his teacher may ask what the hippopotamus eats. Billy, some of the other children, and the teacher may decide to find out by looking up the answer in an animal book. The group may spend a half hour learning about the eating habits of hippopotamuses and other wild animals.

Instructional Methods and Materials

SOI lesson plans are matched to individual needs. Sometimes children with similar needs are grouped together for an activity, and sometimes teachers place materials and instructions for an activity in a separate envelope for each child. The children call these tasks "workjobs" and perform them independently, usually sitting together in small groups with a teacher nearby to provide help when needed.

During directed play time, children in the SOI classroom have access to a variety of materials. This is a time for child initiated projects, play, and individual tutoring. Teachers encourage social interaction between children interested in using the same materials and take advantage of every opportunity to teach children directly.

A variety of materials are available at all times in the Open Classroom. They are placed so that children can reach them easily. Teachers listen carefully in order to engage children in dialogue and activities that lead to an exploration of subjects in which they have expressed interest. Content areas such as math, reading readiness, and fine motor coordination are integrated into a child's activity whenever possible. Teachers and children also discuss problems that come up and make decisions together.

Child Assessment

Both the SOI and the Open Classroom approaches use the same sequenced set of skills in six developmental areas as a guideline for child assessment and as an aid in determining individual priorities. In the SOI classroom, skills are observed in gamelike activities that provide an opportunity for the child to demonstrate specific skills. In the Open Classroom procedure, teachers observe and record each child's performance of specific skills during spontaneous classroom activity. For skills unlikely to be demonstrated spontaneously, the teacher gives each child a simple task in which the desired skill can be observed. Such tasks are generally incorporated into the child's normal activities.

Teacher Role

SOI teachers plan precisely the daily experiences for all children in the classroom. They meet together daily to discuss their plans, to record child progress, and to set new objectives. Although teachers provide materials and direct children in using them, they take care to involve them actively in the learning situation and encourage them to act as freely as possible within the context of planned activities.

In the Open Classroom, teachers help children to understand their environment and their feelings. Teachers give encouragement, feedback, guidance, information, and clarification to children throughout the day. Teachers create a purposeful atmosphere

by expecting and helping children to use time productively and to value work and learning. Teachers in the Open Classroom meet for at least one hour each day to discuss their observations and to devise new strategies for extending learning experiences.

Teacher-Child Interactions

Most interactions between teacher and children in the SOI classroom are initiated by the teacher. Teachers make a conscious effort to ask questions that require divergent, convergent, and evaluative thinking when working with groups of children, as well as when working with individuals.

In the Open Classroom interactions are spontaneous and informal and usually initiated by the child. Teachers are more likely to work with individuals than with a group.

Use of Time

A specific daily schedule is followed in the SOI classroom. During the first period of the day, children are allowed to choose their own activities. Fifteen minute lessons for small groups of children are alternated with periods of less structured activity and with activities, such as music, when the whole group is together. Snacks are served in a family atmosphere, and self help, social, and expressive language skills are encouraged. Children spend about 20 minutes each day on the playground.

The daily schedule in the Open Classroom consists of flexible blocks of time. Many learning activities take place simultaneously. A child may work alone, with a friend, or in a group. Snacks are available on a small table throughout the day. When children are hungry, they may help themselves to the portions illustrated on a menu card. Group meeting is the only time of the day when all children and teachers meet together. During each day's meeting teachers record topics or activities in which individual children wish to participate. The children involved in planning usually share responsibility for leadership during the meeting. Each child cleans up his or her own work space and everyone helps put the room in order at the end of the day. In the Open Classroom, as in the SOI classroom, children spend about 20 minutes each day on the playground.

Use of Space

The use of space varies in the SOI classroom. During directed play, children and teachers are scattered in various parts of the room. During structured lessons, there may be two or three small clusters, each including one teacher and three to five children. During music and snack, teachers and children are together in one part of the room.

The use of space in the Open Classroom changes to meet the interests and needs of the children. Children move freely about the room throughout the day. The classroom is divided into areas with consideration for the type of work likely to occur, the supplies needed, and the proximity to other areas. The art area, for example, has a large table with bins underneath it that contain ingredients and tools for making playdough. On the wall is an illustrated recipe for making playdough, and next to that table is a toaster oven where playdough creations can be baked. Other art supplies—paper, crayons, tape, glue, paint, scissors, boxes, and "junk"—are at the child's level in the same work area. A corner for reading is set off from noisy activity areas and contains a carpet, pillows, and a wide variety of children's books, attractively displayed.

SUMMARY

The gifted and talented handicapped child belongs to the most underserved segment of the preschool population. This article has focused on two major concerns in providing new opportunities for these children: identification and educational programming.

Obviously, identification of the gifted and talented handicapped preschooler presents a real challenge. It is difficult to identify gifted children among the nonhandicapped, but the problem of identification becomes even more difficult when compounded by

handicapping conditions. In this article, the identification procedure was broken down into three steps: location, screening, and assessment prior to placement in the program. Even more importantly, however, the identification process was extended into the intervention period. Through prolonged observation and trial programming more accurate diagnosis is possible.

No single approach to educating gifted handicapped children is advocated in this article. Instead, two approaches are reviewed—the Open Classroom and the SOI model. Certain commonalities exist between the two approaches: staffing patterns, assessment to determine the developmental level of each child, adherence to Public Law 94-142 in writing IEPs, involvement of parents in planning and programming for their child, charting of child progress, and reliance on ancillary personnel. Both programs meet the standards for an exemplary program for young handicapped children delineated by Karnes and Lee (in press). Differences between the two approaches center around the following: theoretical base, curriculum, instructional methods and materials, child assessment, teacher role, teacher-child interaction, use of time,

and use of space. Because the philosophical differences are sharp, it may be more important to match the teachers with the approach than to attempt to match child and program. The important consideration in programming for young gifted and talented children is to help them overcome or compensate for areas of weakness and develop areas of potential or functional talent.

The SOI classroom is teacher directed. The Open Classroom is teacher-child directed. Both approaches stimulate and nurture the talents of handicapped children as well as meet their special needs. Both are viable ways of providing programs for gifted and talented handicapped preschool children.

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A Docent Program in Science for Gifted Elementary Pupils

VIRGINIA P. RYDER

In seeking ways to challenge the gifted and to use the resources of a community, a program training elementary pupils as docents was developed at the California Academy of Sciences in Golden Gate Park in San Francisco under the joint funding of the San Francisco Unified School District's Programs for the Gifted and ESEA III.

The term "docent" refers to a teacher. As museums use the word today it indicates a group of volunteers who are trained by the museums' staff of experts to guide visitors through art or natural science exhibits. This junior docent program brings together small groups of gifted students and those potentially gifted in the sciences in a setting ideal for teaching science to other pupils who visit the museum exhibits. The docents are selected from many different schools and brought together in small study groups that will provide a cross-cultural experience and an opportunity to be academically challenged, to act in leadership roles, and to widen their horizons.

Selection of Docents

Docents are fifth graders selected from the elementary schools of the district. A checklist has been designed to help principals and teachers choose the student who will be most successful as a docent. The hundred or so that are chosen study in groups of 12 to 15 for a morning or an afternoon each week. One-half year is devoted to the biological sciences and the other half year to the physical sciences.

In addition to the gifted and potentially gifted, there are two groups of highly gifted. A special effort has been made to accommodate gifted pupils who are under-achievers and/or are having difficulties getting along in their classrooms.

Program Goals

The following goals represent the philosophy

of the staff of the Elementary Science Resource Center (ESRC), who were appointed to teach very bright children of all backgrounds in an ideal setting.

1. Provide students with opportunities to widen their horizons in the sciences, to develop new ways to use leisure time, to challenge the intellect, and to refresh the spirit.
2. Increase student scholastic achievement in the biological and physical sciences.
3. Afford students the opportunity to strengthen and reinforce a positive self image by the development of leadership potential in the ESRC Docent Program and by acting as student demonstrators to groups of pupils in their regular schools.
4. Introduce students and teachers to the rich and varied resources of the California Academy of Sciences in Golden Gate Park.
5. Develop in all students a knowledge of the principles of ecology through the study of man's relationship to his environment.
6. Afford students of different ethnic, racial, and socioeconomic backgrounds interaction opportunities that will lead to a greater understanding of other individuals.

Staff and Facilities

The facilities of the Junior Academy of Sciences which previously had been used only after school hours, is now used by the docents during school hours. Its classroom, lab space, library, small museum, and live animals make it an excellent classroom for small groups. Pupils are either transported to the program by their parents or take public transportation. The staff consists of a project director and a resource teacher in the biological sciences and one in the physical sciences, both of whom are assisted by part time teaching aides who are graduate students in the sciences at nearby universities.

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Study Sessions

The California Academy of Sciences (CAS) is one of the important scientific research institutions in the world. The Steinhart Aquarium is known internationally to aquarists and the Morrison Planetarium is one of the few in the nation. In addition, there are fine exhibits of reptiles, amphibians, minerals, fossils, birds, insects, botany, timepieces, the Foucault Pendulum, and mammals. The various research departments gather and disseminate scientific data on a worldwide basis. The staffs of these research departments are composed of renowned scientists who collect biological specimens from all parts of the world, bring them back to the CAS to identify, study, and place in the permanent collections.

The docents study the museum exhibits purposefully so they may later serve as guides for their peers. In addition, they have the advantage of seeing the famous academy collections (both alive and preserved) and have the opportunity to meet and speak to many of the scientists who work at the Academy.

If during the year a docent were to develop an unusual interest in a particular facet of science, the ESRC is in a position to guide the student to the Junior Academy of Science or the Junior Astronomical Society or to introduce him to community scientific groups that share his interest. Through these groups the student can attend lectures, go on field trips, and most important of all, meet the scientists who can guide him in his independent study. It is at this point that he may be allowed to use the CAS collections under the guidance of a scientist. This is a rare experience, but for some few youngsters simply "to know it is there" is all that is needed to encourage them. It would be unrealistic to have this as an aim of a program, but an effort is made to stimulate some degree of independent study for each docent.

The following format for a docents' study session is followed for each of the three meetings on a particular subject. On the fourth meeting the student acts as a docent to a small group of his peers visiting the exhibits on a prearranged schedule that coincides with the current topics of the docents' study sessions.

Format for Docents' Study Sessions

1. Mini-field trip: gathering of living material and/or data for laboratory work; outdoor activity, such as a compass walk.
2. Lecture: Presentation of a new concept; activity.
3. Duplicated materials to reinforce new concept.
4. Golden Nature Guide or printed resource material.
5. Laboratory period: introduction of a new laboratory technique; introduction of a new piece of laboratory equipment.
6. Multipurpose time: exploration; independent study; research; study of single-concept film loops; individual help.
7. Study of museum exhibits.
8. Trip behind-the-scenes to visit a research department.
9. Evaluation.
10. Project suggestions and resource books to go home.

Parent Participation

Each year all new docents and their parents are invited to the California Academy of Science to meet the director of the CAS and the staff of the ESRC. After a brief greeting by these different people, a film is shown describing the many facets of the California Academy of Sciences. The parents and docents are invited to visit the student section and tour the exhibits.

Weekend nature walks and car camping expeditions are scheduled every few weeks for the docents and their families. These field trips parallel the subjects being studied by the docents and provide an opportunity for real field experiences and a chance for friendships to develop. The trips also offer the staff of the ESRC an opportunity to teach ecology in the field by example. Because of the wide segments of society participating in the program, there are already many families who are committed to modern conservation thinking and who, by their examples, help to change the behavior of those not as ecologically sophisticated.

Evaluation

The evaluation of the docent program was in both the cognitive and affective do-

mains as set forth by Bloom (1956). The evaluation of the cognitive domain was built into the program through the use of behavioral objectives which are stated in measurable terms.

A card is kept on each docent with the intent of recording any significant behavior shown at any meeting. When a docent takes out a book, asks for special help, or in any manner shows behavior different from that of the group, it is noted. From these cards, after a period of time, it should be possible to show trends in behavior with some degree of accuracy. An effort is made to find out why some youngsters love the program and a few have not liked it. From this case study approach it will be possible to learn how to more accurately choose youngsters who will find the program rewarding. One of the purposes of evaluation is to assess each docent as an individual and to prescribe special activities and projects to capture his interest and provide him with a challenge.

At the end of the year long program both the docent and his classroom teacher are asked to fill out questionnaires evaluating the program. It is of interest that almost without exception what the program meant to the docent was unknown to the teachers. Children who did not adjust to the program were excluded early and those who remained were unanimous in its

praise. They suggested the program could be improved by more time for the program and more subjects to pursue; few children seemed ready to specialize but chose rather to experience a variety of scientific subjects.

Implications

It would seem feasible for school districts to explore the use of community facilities in docent programs for gifted youngsters. Successful pilot programs could then be replicated using different community resources for different academic subject areas.

The feedback from our docents indicate that they enjoy the leadership role of being a docent to their peers and value the opportunity to broaden their horizons as well as to associate with others of similar ability and interests.

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An Independent Study-Seminar Program for the Gifted

Ruth Martinson/David Hermanson/
George Banks

For many years the literature on the gifted has presented accounts of their unusual capabilities. The accounts have described their ability to solve problems at levels beyond the grasp of others and their capacity to analyze information and to synthesize and apply data effectively in new situations. Various writers have pointed out that the gifted operate at levels of abstraction unattainable by others, that they are keenly interested in exploring topics to extraordinary depths, and that their interests often are highly individualized. Reference has frequently been made to the self generative, autonomous effort of gifted pupils who are allowed to pursue topics of interest without the handicap of prescribed time limits.

While the demonstrated and documented characteristics of the gifted should provide adequate information for planning educational experiences of substance for them, the implementation of adequate programs has not followed. In school systems where efforts have been made to provide for the gifted, the programs frequently have consisted of one or two special classes, often taken along with standard requirements. Even in the special classes, the usual procedures have been closely determined and governed by the teacher, so that the student has experienced the traditional program of direct assignments, lectures, and examinations on teacher-deter-

mined content, albeit on an advanced level.

As various types of programs (such as honors classes) were carried on for the gifted, it became increasingly apparent that these classes met the needs of certain able students, but not all. Despite efforts to provide for their different interests and needs, those who were highly gifted still spent time on topics which were not always challenging or interesting to them, even though the content was at an advanced level.

Within the population identified as gifted there are vast ranges of capacities and interests. The highly gifted were sufficiently different from other identified gifted students that they presented unique problems to school personnel working with them. The problems in some respects were similar to those of the average student who waits for the slow learner. The assignments, pace, level, and depth of study were not sufficiently satisfying to the exceptionally bright students.

San Diego Program

In an attempt to minimize the limitations of a prestructured program, the San Diego Independent Study-Seminar Program for highly gifted students was initiated with 40 students from three high schools. The program was especially suitable for gifted students, since the very characteristics of the gifted are consonant with the autonomy and self determination in learning implicit in the independent study-seminar approach. Because gifted students often exhibit extraordinary insight into problems and issues, they may explore aspects of subjects not necessarily apparent to their instructors. Because of their predictable desire to examine and probe in depth, the opportunity to study topics of concern thoroughly becomes highly satisfying and productive. Study at a level appropriate to their abilities in a personalized learning environment enhances learning and self understanding. This is especially

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important in an era when anonymity is increasing.

It may be argued that independent study is desirable for all students, and to some extent this may be true. The need for independence becomes increasingly important for those of higher ability, and vital for those of the highest ability. As Terman put it:

Perhaps it would be a good type of training for any student, bright, average, or dull, but for the gifted student at least, it is the only way that truly educates [Bonthius, Davis, & Drushal, 1957, p. 17].

Terman was discussing the independent study program at Stanford University, where the student population is highly selected. If anything, the need for this approach is more crucial in the typical comprehensive high school with its greater range of abilities.

Program Assets

The independent study-seminar program possesses features which could serve as models for program improvement in other facets of elementary and secondary education. One feature is the care invested in pupil study.

Pupil Study

The pupil study and guidance data include elementary school records, personal interviews, inventories, information from parents, records of outside activities, and standardized measures of achievement and vocational interests. Evaluation of progress takes place largely through personal conference, and the only grade given is AE (Excellent). The total guidance program is thus complete to a degree rarely true in secondary schools, and the knowledge of pupil interests and needs is unusually thorough.

Individualized Planning

A second feature is the individualized planning of programs. Individual student courses of study are determined jointly by the pupil and his faculty adviser, and participants are enrolled in various combinations of courses, seminars, and independent study blocks of time, depending on need. Thus, one student may be involved almost exclusively with independent study, a second person may be enrolled in concurrent

mathematics and science courses, and a third may be enrolled in diverse courses to meet graduation requirements. Still another student may be enrolled at a neighboring university in several courses while he completes high school requirements through independent study. Programs tailored to student needs are highly desirable so that irrelevant requirements may be eliminated insofar as possible. In the independent study-seminar program, this can be done.

"Open" Curriculum Guides

A third program asset is the preparation of curriculum guides and materials which provide open possibilities for research and learning, as opposed to detailed outlines and requirements. Students who are given opportunities to read widely from a bibliography (including such diverse writings as *Death of a Salesman*, *Man and Superman*, *The Nature of Politics*, *All Quiet on the Western Front*, the *Book of Job*, *Oedipus Rex*, the *Social Contract* (Rousseau), and the *Canterbury Tales*) have a broader basis from which to ponder human relationships and to arrive at a better understanding of their own roles. The exposure to such sources as the *Story of Philosophy* (Durant), *What the Great Religions Believe* (Joseph), and *Man's Search for Meaning* (Frankl) gives the students background for seminar discussions and leads to further reading for added information and viewpoints. The concentration on major themes and issues, and the preparation of significant questions and bibliographies mean that the students are exposed to literature and ideas of enduring merit. Study and examination of such topics as American political parties and the Presidency provide timely background for young people who will soon be voting adults.

The discussion of *Man's Inhumanity to Man* was one of a series of seminars based on readings from a special bibliography of 24 works such as *African Genesis* and *Territorial Imperative* (Ardrey), *Games People Play* (Berne), *Manchild in the Promised Land* (Brown), *Soul on Ice* (Cleaver), *Rivers of Blood, Years of Darkness* (Conot), and the works of other writers like Martin Luther King, Konrad Lorenz,

Arthur Koestler, Jean F. Steiner, and William Tenn.

The comment of one tenth grade student who explored the topic of socioeconomic conflict between the individual and society exemplifies the concerns which challenge gifted students.

My basic goal was to attempt to determine the motivations of men as to what causes the conflicts of society. Is that motivation traceable to a basic animalistic instinct, or is man primarily influenced and motivated by other men and society?

His readings resulted in a brief essay in which he presented his conclusions.

Range of Resource People

A fourth major strength of the program lies in the willingness of outstanding resource people to work with the students because they have been identified as young people of great promise who already have demonstrated impressive interests and accomplishments. Therefore, the school is able to match students with specialists from museums, electronic laboratories, the municipal library, fine arts facilities, the medical society, the zoo educational center, and others. Any community, no matter how small, has some possibilities for enhancing learning through the use of community members with knowledge in special fields.

Additionally, professors come in when needed to discuss special topics. The seminar topics vary widely and are somewhat unpredictable, since they are based on identified student interests. The involvement of students with professors has led to enrollment in selected university courses, thus providing the student with simultaneous university credits while completing high school requirements.

Documentation by Teachers

The true values of the program are evident in the records maintained by the teachers. These include documentation of content covered by individuals, parent reactions to the program, student evaluations, individual accomplishments, and teacher comments.

A list of 53 research paper topics from one of the three schools reveals a wide array of interests. The following samples

indicate the latitude possible through individual study:

Animal Extinction
Contrast of Greek and Chinese Philosophy
The Job Corps—Its Value
The Tonkin Gulf Incident
The OAS—The Past and Possibilities
Jim Crow Laws
The Old Testament as History
Sweden in the Baltic: 1700-1709
A Short History of Vietnam from 208 B.C. to 1883 A.D.
Thomas Edward Lawrence
Macbeth: Man at the Crossroads
Anton Chekhov: Social and Political Commentary

Teachers provided opportunities for the parents to evaluate the program and to make suggestions. Two representative comments illustrate their support and appreciation:

... [my child] has been directed into fields of interest ... without experiencing the limitations, and even boredom, of the regular classroom.

... my son has begun for the first time to take an active interest in school. As a parent it has been rewarding to watch the effect that an advanced study group can have on a young growing mind.

Teacher records also indicate that students were given the opportunity to complete 28 courses for college credit and had been given credit for five different high school courses by examination. The latter procedure enabled the students to carry on such activities as study under the supervision of laboratory specialists; production of an assembly program which included scenes from the Nutcracker Suite, piano concertos, and vocal numbers; and in four instances, early entrance into college.

In the present day pressure for "accountability," the records of the teachers need no defense. The documentation of the quality of their work and the accomplishments of their students are far more meaningful than would be records obtained through such devices as pre- and postprogram testing.

Student Participants

The need for a program which provides for student autonomy, limited direction by

teachers, and wide use of community research and laboratory facilities and community personnel becomes most apparent through knowledge of the students themselves.

As a group, their deviation from the average and their special needs are revealed by test data. All of the participants attained IQ's on individual intelligence tests which were at least three standard deviations beyond the mean, with a range of 148 to over 180. On the *Graduate Record Examination*, administered during the 1969-70 academic year, the students' average achievement was beyond that of two-thirds of college seniors for all Area tests. On the Natural Science Area test, they exceeded all but 15 percent of college seniors. The accumulated evidence from their productions and from ability and achievement measures indicates clearly that these high school sophomores, juniors, and seniors are capable of academic work comparable to that of the most able college and university students.

The true complexity and diversity of the students, and added testimony of their need for a highly individualized program are apparent in these four typical examples:

Student A was trying to find out what methods, what techniques, what existing hardware could be used to maintain a closed life-support system. He was using independent study time to write a play for school production, and to complete a novelle. The incentive to do both had developed from learnings in a previous aerospace seminar. Concurrently, he was attending classes in Spanish, history, mathematics, English, and honors physics, all on a flexibly scheduled basis.

Student B described herself as "interested in everything, and dabbling to find out." Her work included a physics seminar, French, Spanish, music, psychology (where she was reading everything from Sheldon to Rogers and existentialism), and computers. Additionally, she was taking mathematics at double the normal rate, was attending classes at spaced intervals, and was involved in a history class and orchestra as well. Her occupational goal was to become a behavioral scientist.

Student C, a junior, was teaching a course in computer technology to gifted high school sophomores. He was working on a

syntactical interpreter and trying to work out a compact syntax in Ditrán with the help of university personnel. He spoke of interests in guitar, creative writing, and bionics. His vocational goal is a Doctor of Philosophy degree in education, with a view to making education more relevant for all students.

Student D described her early childhood interests as maps, collections, and encyclopedias. She has taught herself Greek grammar. In her spare time she has recently read *Mysticism and Logic* (Bertrand Russell), *Book of Acts of God* (Wright and Fuller), and *Politics in America* (D. W. Brogan).

Student Problems in Past Programs

The comments below are typical of difficulties faced by students whose needs are not met in other types of programs:

In honors classes last year, sometimes I wasn't with it. I went to class, but really was off somewhere else, so I didn't learn anything that day.

... there's no room for individual differences.

We shouldn't have bells. They represent a great inhibition to me. They set up an artificial requirement instead of allowing me to concentrate on what I'm really interested in.

We need less teacher expounding, more seminars, more encouraging the student to go on his own, pursuing the subjects he is interested in. This should be started at a very early age. I don't think the average student in high school could handle it—he's too used to being told.

The ability to communicate should be cultivated through means other than the traditional oral and written, by using the senses, feeling, and looking. The goal of school is to develop good citizens, but the regimentation of schools is detrimental to the goal.

Rather than courses in physics and chemistry, we should have courses in scientific method, where students would identify and work on problems.

Benefits of Independent Study-Seminar Program

The benefits of an appropriate program of studies are not only academic but psychological as well. The student who is able to work with intellectual peers learns to

relate satisfactorily to others and to respect himself. The satisfaction of performing at realistic levels, often for the first time, means that the student feels better toward himself and functions as a more acceptable group member than he probably would in a less satisfying environment.

The program additionally permits students to expand their accomplishments in creative and aesthetic realms. The student who is a talented poet, composer, or artist can have time for study and production. The young scientist is able to experiment with new ideas and inventions.

The comments of the students convey the benefits of the program to them:

The program has made me see myself through different eyes. I know now that there is a place for me. I have acquired a sense of purpose, and I see myself as a better person. I'm getting exposed to more things, and I'm kinda blossoming.

The seminars produce responsibility. The students must contribute to make the seminar worthy.

The seminars allow those fortunate enough to be in them time to think. I couldn't do any writing without this program; I wouldn't have time.

I learn much more. I don't have busy work, which is a waste of time. It develops my powers of concentration and self discipline.

Before the independent study-seminar program, I saw myself as a sort of minor deity. I knew that I was more capable of thinking than most people; I didn't have contact with other people like myself. Now I know other people who can also think, and now I'm forced to accept the fact that I'm just a person, which is a great advantage.

The accomplishments of the students are as diverse as their backgrounds and interests. The large blocks of time available for

study and reflection resulted in many accomplishments, both tangible and intangible. Among the intangible was the avid reading of volumes of classic literary works. Somewhat more tangible was the slide production of ecological variations and problems from sea level to the mountains, which came from a student hiker-photographer-outdoorsman who had read *Silent Spring* and other works. Difficult to document in detail or to evaluate by objective measures, but nonetheless highly productive, were student planned and executed panels and seminar discussions in literature and science and student poetry. Of direct interest and value to the entire student body was a play—written, produced, and performed in by a student—which resulted in an excellent hour long assembly program.

Values in these learning programs cannot be understood through traditional evaluation because of their untraditional nature. Perhaps the best evaluative statement of all was made by one student who said, "This is the first year that I've really liked school." When consideration is given to the fact that the speaker was a highly gifted sophomore who had experienced various other local programs for the gifted, the importance of the self direction and independence of the independent study-seminar approach is clear. When the interests of students finally lead to occupations in the study of human behavior, in the improvement of education, and in the solving of social problems, the extra efforts and expense invested in their education will be more than repaid.

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Challenging Gifted High School Seniors

Inez Husted/Pat Pisaneschi/Walter Barbe

Luzerne County, Pennsylvania, in an effort to challenge its gifted high school seniors, inaugurated a countywide program which offered these students an opportunity to add a college course to their high school curriculum. The schedules of the chosen seniors were arranged to accommodate the college courses and the program paid the students' tuition.

Purposes

The purposes of the program were (a) to provide enriching educational experiences for gifted high school seniors in Luzerne County, (b) to acquaint them, by means of experience in a college course, with the academic demands, pace, and expectations of post high school work, (c) to tempt students not college bound with the satisfactions of college life in order to overcome their apprehensions and fears, and (d) to provide some college credit as an inducement to continue.

The label "gifted" was interpreted to mean the upper three percent of the high school seniors in any particular school. This upper limit was interpreted broadly to include those high in either achievement or ability in any single area.

The program was explained to administrative staff members and/or guidance counselors from each school. Meetings in the high school were then scheduled with eligible high school seniors, at which time catalog descriptions of suitable courses and college time schedules were presented.

The program was approved and funded by the Pennsylvania Department of Education after the beginning of the fall semester. The first students enrolled in college courses in January at the beginning of the

winter term, but the majority did not begin until mid February, the beginning of the second semester.

One hundred four seniors enrolled in college courses during the 1968-69 academic year. They came from 15 of the 20 high schools, representing 14 different school districts.

Of 102 students who completed the courses, about one-third ($N=33$) received A in their college courses, while another 28 (almost another one-third) received a grade of B. Twenty-four received a grade of C. About 83 percent of the students received C or above. Eight of the students received a D. One of the courses in which 4 students were enrolled was graded pass or fail. All 4 students received pass. Of the remaining 98 grades received, four were F's and one was a deferred grade. In each case of a student who received an F, attempts were made to interview both the student and the college faculty member. The reason for the failing grade in these cases appeared to be a total loss of interest on the part of the student and an unwillingness to make any effort to change the grade. In several instances the student was doing satisfactory work until the time of the examination. Of the 104 students who enrolled, 7 withdrew before the completion of the course.

Important in the evaluation of the program is the reaction of those involved. Of the 97 who completed their college courses, 95 returned questionnaires. Only one of the students said that he did not enjoy his experience in the program, even though there were 12 who had not been as successful as had been expected. Seventy-eight said that they had thoroughly enjoyed the experience, while 16 qualified their answers. Eighty-six thought that the course they took was worthwhile, 7 replied it was somewhat worthwhile and 2 said it was not worthwhile.

The students attempted to distinguish how the college course which they took differed from their high school courses.

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From *Exceptional Children*, September 1970, pp. 41-42. Copyright © 1970 The Council for Exceptional Children.

"More challenging" was the way about three-fourths viewed the college courses as compared with their high school courses. "More reading" and "more study time required" were reported by about two-thirds of the students. Only about half reported that the material in the college courses was more difficult. About half reported that the college course was more formal and allowed less discussion.

Although knowledge gained and credits earned were certainly important, the most worthwhile aspect of the program appears to have been that these students were exposed to the challenge of advanced learning and became acquainted with the demands and pace of college work. It is hoped that this experience will challenge them to continue their educations.

EXECUTIVE HIGH SCHOOL INTERNSHIPS

A Boon for the Gifted and Talented

SHARLENE P. HIRSCH

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From *Teaching Exceptional Children*, Fall 1976, pp. 22-23. Copyright © 1976 The Council for Exceptional Children.

■ Almost 2,500 gifted and talented juniors and seniors from 20 school districts in 17 states are learning about organizational leadership from the top—as Executive High School Interns to business executives and managers, government commissioners and administrators, newspaper editors, television producers and directors, hospital administrators, judges and attorneys, and directors of social service agencies and civic associations.

For a full semester, on sabbatical from regular classes, they are immersed in the world of organizations and administration, learning how decisions are made and earning a full range of academic credit in the process.

A UTOPIAN EXPERIENCE

"It's like utopia," says Vicki Cook (Hillsborough County, Florida), who has spent her Executive Internship semester with the president of Ensslin Advertising in Tampa. The week finds her variously meeting with clients, presenting storyboards, editing TV commercials (including those in which she has appeared), and spending time in areas such as accounting and production.

Another Hillsborough intern, Karl Miller, is equally delighted with the experience. "Since I've joined the program, I feel like one of the best informed citizens in Hillsborough," he reports.

Karl's placement with the executive director of the Hillsborough County Planning Commission involves law and city planning, areas he hopes to combine in a future career. His internship responsibilities include attending public hearings of the commission and updating research and analytical information on economic development in the county.

Both placements were arranged by coordinator JoAnn Hunter of the Hillsborough County Public Schools, which initiated the first Florida model in 1973. Ms. Hunter has been largely responsible for spreading word about the program to her colleagues in gifted and talented education throughout Florida.

One offshoot of the Hillsborough model is in the Orange County Public Schools, where coordinator Doris Prather has just completed her second year. Ms. Prather learned that Joe Finger, an Oak Ridge High School senior who ranks second in his class, was interested in a career in broadcasting, so she found him the perfect spot, with WKIS Radio in Orlando, where he has written commercials and news stories and even broadcast sports reports. "The program has given me an opportunity to gain some exposure to the business world," he adds.

"I have a natural interest in making money," grins Kevin Hanks (Pinellas County, Florida) in explaining his selection of an Executive Internship with the president of Raymond, James & Associates, where he has developed expertise in the stock market and in the management of a brokerage house with 12 offices throughout Florida.

His placement has brought Kevin into contact with other brokers, analysts, and "a multimillionaire oilman." A research report on nonferrous metals which he prepared was used in an analyst's speech.

Kevin, who is pursuing an accounting course through independent study, reports that he has offered his father some advice on investments. "I gave him a tip that wasn't so hot," he adds with a shrug.

The Pinellas County Public Schools coordinators are Jan Rouse and Stan LeBoss who, like their other Florida counterparts, are operating models of the program funded as gifted and talented education through a special state formula.

The strong interest in law found among many high school students is reflected in a Palm Beach placement with the counsel to the Florida State Commission. There, Executive Intern Patrick Healy can be found researching pretrial information on securities frauds and "an occasional murder."

One of the highlights of his semester was accompanying his sponsor to the state capitol, Tallahassee, where he met with the lieutenant governor and other officials. "Law used to be a remote interest, but now I'm very caught up in it," reports the Palm Beach intern. Winner of several scholastic awards and selected by the American Legion to attend Boys State, he has addressed both the Lions Club and a school board meeting about the program.

PROBLEM SOLVING CURRICULUM

Besides the excitement of their placements, which extend from Monday through Thursday during the entire business day, the interns also attend Friday seminars on management, administration, and decision making. Adapted from the Harvard Business School case study approach, the curriculum emphasizes a problem solving focus in which interns learn to function, management consultant fashion, as analysts of organizational problems.

After the first few weeks of reading prepared cases, the interns take over and begin to develop their own. "I was hesitant at first about presenting a case study to the Palm Beach group," recalls Patrick Healy. "However, the other interns quickly got caught up in it."

ROLE OF THE COORDINATOR

The Palm Beach County Public Schools coordinator Harriet "Penny" Hogan considers her job ideal. Ms. Hogan and other coordinators throughout the country are responsible for identifying potential sponsors, developing the role of the high school student, briefing the teachers and additional school personnel, and recruiting students in the high schools. Coordi-

nators speak to student groups; perform the necessary administrative tasks of distributing applications and program materials; and personally follow up with students who have displayed an initial interest in the internship program.

In addition, the coordinators orchestrate sponsor and student interviews, decide which students will be seen by what sponsors, and arrange final placements based on mutual preferences.

Students keep extensive records of their experiences through daily logs, which are reviewed by the coordinators.

A NATIONAL BASE

Like the other program managers, Coordinator Hogan was initially prepared for her assignment through a week-long National Coordinators Training Academy sponsored by the parent organization, Executive High School Internships of America. Located in New York City, the national office provides training and ongoing technical assistance to participating districts, along with program materials, coordinators' bulletins, newsletters, and intern insurance. An annual National Staff Training Institute brings together all the Executive Internships coordinators from around the country, and the National Conference of Executive High School Interns attracts student delegates from each of the districts to Washington, D.C., for a week.

The national office works with school systems that agree to fund a full time coordinator position for the program; release students full time for participation, without having to attend classes or keep up with schoolwork; provide optional independent study opportunities; and award a full semester of academic credit for participation.

Founded in 1971 as a joint undertaking of the New York City Human Resources Administration and Board of Education, the program has been expanded around the country through the national office, which opened in 1973. Its support has come from major foundations, including Ford and Rockefeller, the National Institute of Education (NIE), participating school systems, and corporations such as Exxon Company, USA. NIE is underwriting a two year evaluation of the program through the Center for Vocational Education at Ohio State University.



VIII. A View from the Bridge

Introduction

We find "A View from the Bridge" an appropriate title for this section from both a metaphorical and a literary perspective. In a metaphorical sense, we see a similarity between the wise old sea captain of days gone by and the highly regarded leaders in gifted and talented education of today. Just as the old sea captains standing on the flybridge could see currents and tide changes that normally escape the untrained observer, so can the leaders in gifted and talented education pick up the subtleties and patterns in the development of programs for gifted and talented students. The sea captains were also able to look out onto the yet untraveled waters and predict the dangers that lay ahead. Likewise, leaders in gifted education can use their knowledge and expertise to forecast the future directions for gifted and talented education. Finally, just as certain sea captains seemed to have a sixth sense about when to go with their compasses and when to go with their instincts, so do certain leaders in gifted and talented education seem to have an intuitive sense about the directions we should be taking and the educational, political, and economic climate we are approaching.

We have learned through the years that the words of the seaworthy old captains should not be cast aside as just bits of nautical folklore. In a similar fashion, we will learn that the timely insights of the leaders in gifted and talented education should not be treated as ivory tower romanticisms. There are many new ideas concerning the current thrusts in the gifted movement. While no changes should take place based on the whim of an educational leader, solid, field tested research deserves the full attention and support, where appropriate, of political leaders, local school boards, state legislators, and others in a position to make decisions regarding programs for the gifted.

This brings us to the literary interpretation of the title, "A View from the Bridge." In Arthur Miller's play of the same title (1960) we, as "viewers from the bridge," see the inevitable fate that awaits Miller's tragic character, Eddie Carbone. We are frustrated, however, that although we are fully aware of the consequences of Eddie's actions, we are incapable of effecting any change in his behavior. His neighbors, lawyer, and family members also have a "view from the bridge" as they stand by watching the destruction of a loved one. They, too, are unable to reach him. In a similar sense, while those who view gifted education "from the bridge" may recognize the directions we should be taking, they often face frustration in trying to convince "the powers that be" of the significance of their theories. In this literary analogy we sense that those with the power to bring about change (the Eddie Carbones of education) are in some ways unwilling to make the commitment. Thus, while proponents of programs for the gifted and talented "stand on the bridge" sharing their insights and wisdom, their words often fall upon deaf ears. This is not to discourage those with ideas for the future development of educational programs for gifted and talented students from speaking up about them, but only to serve as notice to those who try to make their voices heard that their message may not reach those "upwind" of them without some hard work.

The articles in this final section are examples of those who stand "upon the bridge" and help us understand the "ebbs and tides" of our mission. Lyon begins this series by summarizing the status of gifted education in the year 1975. After outlining progress made in the strengthening of state leadership and in the appropriation of federal monies, Lyon states some important goals for the future. In an article published 3 years later, Mitchell and Erickson give their findings on "The Education of Gifted and Talented Children: A Status Report." The authors point out that "despite the fact that there is 'more of everything' now than there was in 1972 . . . the United States still falls far short of meeting the educational needs of this special segment of its population." They do not paint a totally bleak picture, however. "There is progress; there is motivation; and there is definite evidence that a real and lasting commitment has been made . . ."

In "The Arts and Humanities Come Alive for Gifted and Talented," Lake summarizes the findings of a special conference organized to explore the arts and humanities and their implications for gifted and talented youths. Addresses from several of the key speakers are presented in synopsis form followed by a list of some of the agencies that have made notable contributions to the field. In the final article, Zettel and Ballard stress the "Need for Increased Federal Effort for the Gifted and Talented." After developing a tight rationale, the authors discuss the recommendations The Council for Exceptional Children submitted to Congress and the Council's reasons for doing so.

Just as the title of this chapter seemed appropriate for the substance of the articles, so does the substance of the articles seem appropriate for the concluding chapter of this book. Having looked at some major issues in the gifted movement, we are now ready to gain greater insights as we get a glimpse at "the view from the bridge."

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Education of the Gifted and Talented

HAROLD LYON

The gifted and talented are a new national priority and a broad definition of giftedness is being emphasized. The BEH staff of Gifted and Talented Education are as much concerned with leadership ability, creativity, and artistic talent as they are with academic prowess and high IQ's.

Our national effort had its beginning in 1970 when Congress asked the US Commissioner of Education to submit a report on what was happening educationally to gifted and talented youth throughout the country. The report revealed the following:

1. Fewer than 4% of the country's gifted and talented youth were receiving services commensurate with their needs.
2. Fifty-seven percent of the school administration said they had no gifted or talented in their classrooms.
3. Only 10 of the 50 states had employed a full time person to oversee the needs of the gifted and talented.
4. There was a prevailing myth that the gifted and talented came almost exclusively from upper middle class and wealthy families.

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5. Also prevalent was the false notion that the gifted will easily achieve success on their own.
6. Considerable hostility was directed toward the gifted and talented.
7. Only 12 American universities were training teachers at the graduate level for the gifted and talented student.

Strengthening of State Leadership

In the face of these kinds of problems, the US Office of Education (USOE) began 4 years ago a national effort for the gifted, initially without any specific federal funding. Since that time, both legislative provisions and supporting appropriations have been forthcoming. Strengthening of state leadership became the highest priority, and the result was the creation of a National Leadership Training Institute (LTI) for the Gifted and Talented, with the mission of training teams of 5 leaders each from every state.

At annual training sessions starting in 1972, each team developed comprehensive state plans for the gifted and talented. With \$1.1 million in funds provided under the Education Professions Development Act for a 3 year period, the LTI also held such activities as regional awareness conferences on the culturally different; gifted and more localized discussions involving parents, administrators, and school board members.

In addition to the programs sponsored by LTI, 3 projects were funded under Title V of the Elementary and Secondary Education Act to enable consortia of 10 to 15 states in each

From *Exceptional Children*, November 1976, pp. 166-168. Copyright © 1976 The Council for Exceptional Children.

project to undertake cooperative ventures focused on the gifted and talented. Such projects have reached about one-half of the states, with funding totaling \$250,000 in 1974 and slightly below that level in 1975. Meanwhile, BEH had helped establish a national clearinghouse for the gifted and talented. Located in the ERIC Clearinghouse on Handicapped and Gifted Children at The Council for Exceptional Children in Reston, Virginia, the clearinghouse now disseminates information concerning research on the gifted and talented and the best practices available for dealing with such youngsters. Progress over the last 4 years has been such that today 21 state departments of education employ a full time person to work with the gifted and 23 other states have a person working 50% of the time in their behalf.

Meanwhile, significant activities have been launched in certain fields of perhaps special interest to the gifted and talented. One such activity was the convening of an institute for career education for these youngsters, with a number of leading experts in this field invited to attend. An outgrowth of this activity was the 1974 publication of *Career Education for Gifted and Talented Students* edited by Kenneth B. Hoyt, Associate Commissioner of Education for Career Education, and Jean R. Hebel, Professor in the Special Education Department, University of Maryland. Two more recent projects in this area involve the development of curriculum materials and teaching guides for career education for the gifted and talented and the establishment of three exemplary projects in Wisconsin, Rhode Island, and Washington.

In another special field, a program undertaken with assistance from the USOE regional offices and the National Endowments for the Arts and Humanities involves seeking to infuse the arts into all learning experiences of the gifted and talented. As part of this effort, a national conference on this subject was held last year under the joint sponsorship of USOE and the South Dakota State Department of Education.

Another program that the Gifted and Talented Education staff coordinates is the Presidential Scholars Program, which brings 121 of the country's most outstanding high school seniors (a boy and girl from each state and outlying area plus 15 from the nation at large) to Washington, D.C., to receive a presidential medallion and to meet top level government officials.

Appropriations

Education of the gifted and talented gained its initial foothold in legislation under the Education Amendments of 1974 (P.L. 93-380). With the appropriation of \$2.56 million for fiscal year 1975, regulations were drafted concerning the issuance of grants and contracts for projects focused on the gifted and talented.

The largest proportion of the initial allocations is going to states, with 26 states receiving 2 year grants the first year. Each such grant may contain three components: a state element, an inservice teacher training element, and a local element made up of one or more model projects with statewide implications. Also, mini-grants of from \$1,000 to \$20,000 were made to 18 local school districts.

A third category of allocations is devoted to training grants for professionals who will work in various capacities in educational programs for the gifted and talented. Included is a \$190,000 grant to a consortium of academic institutions based at Teachers' College, Columbia University, to develop a graduate training program that will produce a cadre of 50 leaders over the next 3 years, a National Training Institute (NTI) funded at \$165,000, and a National Intern Training Program at the George Washington University Institute for Educational Leadership funded at \$70,000 to enable selected teachers or graduate students to spend one or two semesters working in an intern capacity with programs for the gifted and talented.

In addition to the grants, the program includes 2 categories of contracts. The first funds 6 national model projects for such target groups as members of minorities, talented youth with visual and performing arts, rural children, young children, and creative youth, in addition to a model community mentor program. This money will not be used to initiate new projects but to replicate and demonstrate already proven projects. The second category of contracts is for information clearinghouse projects for gifted and talented youth.

Goals

In these efforts and in all other activities under the Gifted and Talented Education program runs a humanistic theme: an awareness that a particular teacher or coach or other respected adult can impel young people in new and more constructive paths. That

awareness also recognizes that the tendency in dealing with the gifted and talented is too often to force them down the purely cognitive track, with little or no attention paid to their feelings or affective development. Alfred North Whitehead said: "After you understand all about the sun, the stars, and the rotation of

the earth, you may still miss the radiance of a sunset." Our goal is to stimulate the kind of educational environment for the gifted and talented that nourishes not only their skills but also their capacities for awareness, empathy, communication with their fellow human beings, and appreciation of a sunset.

The Education of Gifted and Talented Children: A Status Report

PATRICIA BRUCE MITCHELL
DONALD K. ERICKSON

IN 1971 US Commissioner of Education Sidney Marland completed a comprehensive, Congressionally mandated study and delivered a status report to the Congress on the "education of gifted and talented children" in the United States. The report concluded that policies and programs for educating gifted and talented children were all but nonexistent (Marland, 1972).

The Marland report stimulated renewed interest in, and attention to, the educational needs of gifted and talented children. Among the significant outcomes of the study were actions taken by the United States Congress. In 1972 Congress created the Office of Gifted and Talented (OGT) within the United States Office of Education. In 1974 they funded Section 404 of Public Law 93-380 (Amendments to the Elementary and Secondary Education Act). This authorization has provided two and a half million dollars annually to help state and local education agencies develop programs and extend personnel training programs.

Between 1971 and 1977 it was evident that state and local education agencies were increasing their commitment to the education of gifted and talented children. Thus, OGT decided to follow up on some of the information gathered in 1971 and commissioned a survey designed to assess the progress made since the Marland report was written.

In October 1976 OGT awarded an information contract to The Council for Exceptional Children. One of the five tasks to be accomplished was to develop, conduct, and report the results of a national survey. The survey would identify current policies, resources, and

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From *Exceptional Children*, September 1978, pp. 12-16. Copyright © 1978 The Council for Exceptional Children.

services for the education of gifted and talented children in the United States and its territories.¹ This article highlights only the major findings from the survey.²

Major Findings³

Data collected in this survey were organized into five major categories. Each category attempts to answer a broad but basic question that inevitably surfaces in any serious discussion about the education of gifted and talented children. Following is a list of the five categories and their inherent questions. The reported findings correspond to these categories.

1. Gifted and Talented Children: How many are identified and receiving services?
2. State Policy: How many states have a legal base for gifted and talented programs?
3. State Personnel: How many people are designated to work on behalf of gifted programs at the state level?
4. Federal and State Funding: How many dollars are being committed to programs for the gifted and talented?
5. Preparation of Personnel: How many pre-service and inservice training programs are available to persons entering or already involved in gifted and talented education?

Gifted and Talented Children

How many gifted and talented children are there in the United States and how many of them are identified and receiving some type of specialized educational services?

The National Census Bureau reported that there were 45,097,157 school aged children in the United States and its territories at the be-

ginning of the 1976-1977 school year. Most authorities agree that at least 3% of the general population would be classified as gifted and/or talented using the Office of Education's definition. Calculating from these two pieces of information it can be reasonably stated that there were at least 1,352,915 gifted and talented school aged children in the US public schools in 1976-1977.

The survey asked if the states maintained records on the number of children who were identified as gifted and talented and were receiving special educational services. If the answer was "yes" they were asked to report the number of children.

Thirty-two states provided data on this question for the 1976-1977 school year. An analysis of the data reported yielded the following observations:

1. These 32 states identified and provided some type of special educational services to 437,618 gifted and talented children in 1976-1977.
2. Two states provided services to more than 3% of their school aged population.
3. Among the 32 states reporting 1976-1977 data there was a range from .06% to 4.5% (mean = 1.59%) of the school aged population who were identified as gifted and/or talented and were receiving some type of special educational services.

Direct comparison of this data with the Marland report is not possible since data on "children identified and served" were not collected in 1971. The Marland report did "conservatively" estimate that between 2.9% and 4.8% of the school aged population could be identified as gifted and talented.

State Policy

How many states have a policy base for their programs for gifted and talented children? What is the form and substance of this policy?

The states and territories were asked to document the existence of written and adopted state statutes, administrative policy, and/or state plans that provide direction to their educational endeavors on behalf of gifted and talented children and youth. They were also asked whether or not their policy base included (a) a definition of gifted and talented, (b) required identification procedures, and (c) specificity in the provision of educational services.

¹In this article, as in the report itself, "The States" will include the District of Columbia. Thus, reference may be made to 51 states. The territories will always be referred to separately.

²Complete survey results, including detailed information on the individual states and territories, as well as data on the construction of the survey instrument itself, are included in the final report: *The Nation's Commitment to the Education of Gifted and Talented Children: Summary of Findings from a 1977 Survey of States and Territories*. Order Stock #171 (\$6.50) from The Council for Exceptional Children.

³All data reported in this article, as in the Final Report itself, reflect information as of June 1977. No additions to the report have been made since that was the cutoff point for data collection for the survey.

These policy related questions generated the following information:

1. Eighty-four percent of the states (43 of 51) have some type of written policy that provides governance to their educational endeavors on behalf of gifted and talented children.
 - Twenty-eight states (55%) have both statutes and administrative policy documents.
 - Six states (12%) have statutes but no written regulations or guidelines.
 - Nine states (18%) have administrative policies but no statutes.
 - Eight states (16%) have neither statutes nor administrative policy.
2. Of the 43 states that do have some type of written statute or administrative policy for the education of gifted and talented children and youth:
 - Thirty-eight states (88%) include a definition of gifted and talented in the policy.
 - Thirty states (70%) describe identification procedures in the policy.
 - Twenty-seven states (63%) describe guidelines for the provision of specific services.
3. Eighteen states have an officially adopted state plan for the education of gifted and talented children and youth. Another 25 states report that their state plan is "being developed" or has been developed but not "officially" adopted.
4. No policy base for the education of gifted and talented children exists in any of the territories or in the Bureau of Indian Affairs.

This data shows a marked improvement to that reported by Marland. He stated that 21 states had some type of legislation governing programs and services for the gifted and talented but also suggested that much of that legislation represented intent only and in many cases did not lead to the provision of programs and services.

State Personnel

How many persons are there at the state education agency level who are specifically assigned to work on behalf of programs for the gifted and talented?

The existence of state coordinators and state consultants working directly with state and lo-

cal personnel on programs for the gifted and talented is viewed as strong evidence of a commitment to the educational needs of the gifted and talented. The Marland report revealed that only 24 states had a position with any designated responsibility for gifted and talented educational services. Only 10 of these 24 states had persons assigned for 50% or more of their time.

The 1977 survey presents quite a different picture:

1. As of June 1, 1977, 27 states have at least one person with a full time professional assignment in the area of gifted and talented education (four of these states have two full time persons and two states have three full time persons).
2. Of the remaining 24 states, 14 have professional personnel assigned to gifted and talented program efforts at least half time. (One territory also has 80% of one person's time assigned to gifted and talented programs).
3. As of June 1, 1977, there is an equivalent of 48.18 persons at the state education agency level working directly on gifted and talented programs.

Federal and State Funding

What is the source and the magnitude of financial support going to programs for the gifted and talented?

The states were asked to identify the amount of both federal and state appropriations for gifted and talented education services for two separate school years—1975–1976 and 1976–1977. Their cooperation in this difficult task was excellent. However, few of the states had all of the information requested. Thus, the observations listed here are tempered by the number of states that provided comparable data:

1. Fourteen states reported federal and state appropriation levels for both years. The total appropriation of these 14 states for 1976–1977 was \$27,384,316, which was a 26.48% increase over their total for 1975–1976. State funds accounted for 93.1% of the total appropriation of these 14 states.
2. Nineteen states reported utilization of federal funds for both years. In 1976–1977 these 19 states received \$3,219,162 in federal funds for gifted and talented programs, which was a 47.67% increase over 1975–1976.

3. Twenty-three states reported state appropriations for both years. In 1976-1977 these 23 states allocated \$47,076,154 in state funds for gifted and talented programs, which was a 17.78% increase over 1975-1976.
4. Wherever comparable data exists it shows that state funds account for about 95% of the total amount expended on programs for the gifted and talented.
5. In 1976-1977, 8 states accounted for 91.8% of the total amount of state funds reported by 30 states as spent on programs for the gifted and talented.

The Marland study provided virtually no information on funding levels for gifted and talented programs. It did admit that federal funding was almost nonexistent. On the surface, the 1977 survey data presents a very healthy financial picture. Careful examination of the existing data still reveals not only inadequate funding but highly disproportionate funding of educational programs for the gifted and talented in the United States and its territories.

Preparation of Personnel

How many preservice and inservice training programs are available to persons entering or already involved in gifted and talented education?

This section of the survey asked the least specific questions and therefore yielded the least specific information. Based on the questions asked the following observations can be made:

1. Forty-five states reported that they have at least one institution of higher education that offers one or more specific courses in the education of gifted and talented children.
2. There were reported to be 177 institutions of higher education in the United States that offer one or more courses in the education of gifted and talented children and youth.
3. Forty-two states reported that they sponsored inservice training in 1976-1977 in the area of educating the gifted and talented. This was more than double the number of states reporting sponsored inservice training in 1975-1976.
4. Only 13 states maintain records on the number of inservice sessions sponsored by other agencies within the state.

Conclusions

The "national picture" of educational programs for gifted and talented children and youth in 1976-1977 is better than it was in 1971-1972: more students are being identified and served; more states have statutes and policy documents; more money is being allocated; more personnel are being assigned to work in this area; and more training is available. This conclusion is true and can be documented. It is also insipid. Despite the fact that there is "more of everything" now than there was in 1972, the data gathered in this survey emphatically demonstrates that the United States still falls far short of meeting the educational needs of this special segment of its population. Consider these few facts:

1. Only two states (out of 35 reporting such data) have identified and provide gifted and talented educational services to 3% (the *minimum* estimate) or more of their total school population.
2. Twenty-three states (out of 35 reporting such data) have identified and provide gifted and talented educational services to 1% or less of their total school population.
3. Twelve states (out of 50 reporting such data) utilized no federal entitlements to support gifted and talented programs in either 1975-1976 or 1976-1977. Four of these states also had no state allocations.
4. Thirteen states (out of 47 reporting such data) appropriated no state funds to support gifted and talented educational programs in either 1975-1976 or 1976-1977.
5. Twenty-six states reported data from which a "Federal/State (i.e., total federal allocation plus total state allocation) expenditure per child identified and receiving service" figure could be calculated. The range was from \$4 per child per year to \$622 per child per year. The mean was \$187 per child per year.

Is this picture bleak or is it encouraging? Is it depressing or is it upbeat? Is it a disgrace or a challenge? As a matter of fact it's probably all of these things.

But the most important reality is that there is movement; there is progress; there is motivation; and there is definite evidence that a real and lasting commitment has been made to

ensure an equal educational opportunity for every gifted and talented student in the United States.

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The Arts and Humanities Come Alive for Gifted and Talented

THOMAS P. LAKE
CEC Information Center

The Arts and Humanities, Gifted and Talented Conference in South Dakota—Unless we resolve to make schools more humane, they won't change one iota. The artist and humanist, teachers and principals, working in schools and communities—All people becoming all they can become, just think of the opportunities!

Dr. Harold Arbert, Director
Arts and Humanities Program
US Office of Education

It's the time of revitalizing a nation; it's the time of humanizing the public schools; it's the time of expansive teaching in the classrooms; it's the time of gifted and talented youth becoming all they can become.

To this end, what can be done? Educators already realize that the gifted/talented child will not necessarily flourish on his own. The interactive process vital to education needs a new sophistication to challenge the needs of these exceptional young people. New ideologies, new resources, new methods, and new ideals place a tremendous burden on the classroom teacher who faces these children from day to day. The implication is that classroom teachers need to develop sophistication as resource persons in the areas known as the arts and humanities. It is through the knowledge of these civilizing forces and the transference of these ideas that the gifted and talented can become immersed in understanding their world.

Sponsored by the South Dakota Division of Elementary and Secondary Education, US Office of Education, Region VIII, Denver, Colorado, a temporary community of artists, teachers, and state and national leaders convened October 2-4, 1974, to explore the arts and humanities and their implications for gifted and talented youth.

With a Clear Image of the Past

The first speaker to the 400 persons assembled in this temporary community was Dr. Leland Case, currently a member of the Special Advisory Council to the Chairman of the American Revolutionary Bicentennial Commission and an historian, educator, and writer in his own right. He set the first goal of the community by quoting from *Mrs. Miller* by Jan Struthers: "You cannot successfully navigate the future unless you keep always, right beside you, a small, clear image of the past." In this context he proceeded to lay the groundwork of the conference by pointing out the rich and varied history which America has left and the value of this knowledge to young people. Dr. Case summarized,

We become better cosmopolitans if we are first realists . . . and may I say it is a special pleasure to have even a small role in this project which seeks to discover the subsoil of American creativity; to discover talented, gifted people; to learn how to measure that talent, and then supply that essential spark from the realization of what they can do—inspiration and motivation.

By Actualizing Self

In a later presentation Dr. Harold Lyon, Director of the Gifted and Talented Program,

From *Exceptional Children*, January 1975, pp. 261-264. Copyright © 1975 The Council for Exceptional Children.

US Office of Education, emphasized the importance of this meeting by pointing out that "this conference (is) focusing on humanizing education in the arts and humanities, gives a chance to explore some ways of enhancing life, of enhancing potential, of actualizing ourselves." He went on to explain that the teachers who seem to influence their students most are those who have certain traits called learning facilitators. In brief, the traits include, first, empathic understanding, the ability to put yourself in another person's shoes; second, the ability to prize other individuals, celebrate their uniqueness, really care about them; third, a sense of genuineness, being able to be yourself with both strengths and weaknesses exposed; fourth, a sense of trust between student and teacher; fifth, confidence in subject matter.

With these traits in mind, Dr. Lyon suggested that a good teacher then develops what he called natural authority, that is, the creative ability developed by sharing all one's learning experiences and resources with one's classes. It is the teacher with natural authority who allows the students to realize fully their potential and to expand their ego boundaries to discover who and what they are. He pointed out,

If we could treat people the way we treat a unique sunset—no one tries to change a sunset. We don't say it needs a little more orange in the cloud cover, a little more pink on the left hand side. Rather, we let it evolve and grow in its own unique way. My fantasy for the arts and humanities and for humanistic education is that if we can treat each other like a sunset . . . then I think we can offer our youngsters much greater chances for self actualization.

With this sense of perspective the participants left the auditorium and proceeded to the workshops which focused on specifics of the arts and humanities—music, reading, visual arts, dance, film making, libraries, drama, and so on. In total these sessions represented a comprehensive overview of what can be done for the gifted/talented student in the classroom, as well as at national, state, and local government levels.

By Not Perpetuating Our Mediocrity

A fitting capstone to these workshops came during a luncheon session from the ideas of Murry Sidlin, Resident Conductor,

the National Symphony Orchestra, Washington, D.C. Mr. Sidlin pointed out that "the purpose of this conference is defining how to humanize the public school. But it seems to me the question really should concern, or at least take into account, how to humanize *those* who humanize the public schools." He went on to say that he was involved in a rather intense concern of the ability of educators to serve as models for the humanizing process.

I feel quite strongly that an intimate association with the arts is mandatory to this end, and, quite frankly, I do not feel that most educators I have known attend concerts, theaters, ballets, the arts, on a regular basis. What's more these people do not feel the emptiness in their lives as a result of the absence of a participation in the arts.

In an energetic plea to adults, Mr. Sidlin asked, "How long can we go on creating and perpetuating our own mediocrity?" The community became noticeably hushed—whether this was from embarrassment or from the stark realization that he might be right was not quite clear. Everyone listened.

Mr. Sidlin discussed the study of music in the schools, asking how it is possible to humanize the public schools without programs of music. (There are those who would eliminate the study of music altogether or keep it relegated to its present secondary status.) What's to be done? Mr. Sidlin suggested several ideas presented in brief here.

First, the quality of the existing young people's concerts must be improved by having the conductor spend time in the classroom. Music educators and supervisory personnel must meet regularly to plan concerts which complement the students' studies and they must prepare them for the concert itself. Second, the concerts should say something and be based on some premise of value, i.e., what are musical styles, what makes music American, what is orchestration. Third, the orchestra must form well defined relationships with the school. It must divide into small ensembles—duos, trios, quartets—and go into the classroom and perform before small intimate audiences. In essence, "we must let the artist speak to us and create for us. If we can only recognize the need, we will discover the resources."

By Not Becoming Victims of Technology

The final major presentation was delivered by Dr. Virginia Trotter, Assistant Secretary,

US Office of Education. Dr. Trotter asserted the concern of many educators that we are becoming victims of our technological strength. She echoed the concerns of Homer and Shakespeare when she asked, "Where is humanity going?" In understanding our solar system over the years, Americans have developed a new sense of unity with the universe but in so doing have lost the sense of importance which needs to be placed on the humanities. Art is, she said, best understood as it attempts to create human communication at its most intense level. Dr. Trotter's inference was that in shooting for the stars and groping for our relationship with the universe, we have lost our sense of oneness and interrelationship here on earth.

Dr. Trotter pursued the idea of teacher as artist when she quoted *Art and Intellect* as saying, "Once an attitude is established, a student begins to organize his own body of knowledge and he begins to conduct his own education. In this process the teacher becomes an artist in the sense that a writer or a painter is an artist."

In conclusion, Dr. Trotter reasserted the concern of other presenters when she said,

We must seek a new balance of power in the classroom, one in which the arts are fundamental in the program of every fully educated student and one in which the concept of true, complete literacy includes the arts as an indispensable element. Educators must stake out a role in the forefront of American concern for the intellectual, aesthetic, and spiritual dimension of life.

By Seeing What Others Have Done and Can Do

Space does not allow a discussion of the various other presentations made. Suffice it to say, they too echoed the challenges just discussed.

Agencies Presenting Programs

Certain agencies did present scholarships or programs for gifted and talented youth which are worth investigating, and they are listed here for your use.

- The Experimental Arts Program
Southern Methodist University
Dallas, Texas 75275
- The Role of the Parent for Gifted/
Talented
c/o Elizabeth Paul
3616 Woodcroft Drive
Minnetonka, Minnesota 55343

- Aesthetic Education Program
CEMREL, Inc.
3120-59th Street
St. Louis, Missouri 63139

Programs of the National Endowment for the Humanities

Another agency which presented an extensive and worthwhile program was the National Endowment for the Humanities (NEH). This program, established in 1965, grants funds for studies in the humanities. The following are NEH supported activities for which proposals may be submitted.

Youth grants in the humanities. This program offers young people, both in and out of school, an opportunity to explore their interests in the humanities and to enlarge their education and social experience. The age limitation is 30 years old.

Public programs. The Division of Public Programs aids the development, production, and dissemination of programs and resources for informal humanities education of the general adult public. Support is currently offered for the following:

1. *State based program.* The endowment has helped create state committees in the humanities in most of the states. These committees regrant endowment funds in support of specific projects which involve the general adult public and professional humanists, draw upon the humanities, and relate to the particular theme selected annually by the state committee. Addresses of the state committees are available on request.
2. *Film and television.* Support is available for the production of films and television programs in the humanities suitable for national distribution. Only nonprofit organizations are eligible to apply.
3. *Museum programs.* Support is available for interpretive exhibitions, community education projects, and staff development in museums and historical organizations. Only institutional applications are accepted.
4. *Special projects.* Grants are available for local, regional, or state projects of public adult education in the humanities. Priority is given to activities which are designed to bring humanistic knowledge to bear on aspects of contemporary national

life and which involve the active participation of an adult public. Applications are invited from libraries, museums, historical societies, educational institutions, and other community organizations.

Education program. Planning, development, and program and project grants are made by the Division of Education Programs to carry out experiments in humanities education, to hold conferences and institutes, to develop teaching materials, to promote educational uses of libraries, and to plan, carry out, and evaluate curriculum revision. Applications are received only from non-profit institutions and organizations.

Fellowships and stipends. Fellowships and summer stipends are available for teachers, scholars, and interpreters of the humanities with study projects aimed at advancing, en-

larging, or synthesizing the individual's learning and understanding. A special program also supports study opportunities for persons engaged in certain noneducation professions.

Research grants. The Division of Research Grants supports original thought, basic research, interpretive writing, and editing projects in any humanistic field. Applications are accepted from individuals and institutions.

Planning. Although not operating a formal program like those described above, the Office of Planning supports projects which do not fall within the scope of existing NEH programs. The Office especially seeks promising proposals which would assess the status of the humanities in the nation, develop new applications of humanistic knowledge, or encourage more active interest in the humanities among all sectors of the population.

A Need for increased Federal Effort for the Gifted and Talented

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On February 24 and April 25, 1977, Harold Perry, President of The Council for Exceptional Children, appeared before the Senate Subcommittee on the Handicapped and the House Select Education Subcommittee and called upon the Congress to realize that the education of our gifted and talented children had to become a federal priority. To best meet this request, CEC is recommending that the following legislative action take place:

1. The current federal definition of handicapped children (Education of the Handicapped Act, Part A, Section 602) for educational purposes should be changed to a definition of "exceptional children," and that gifted and talented children be included in that revised definition.
2. The current Bureau of Education for the Handicapped (BEH) within the Office of Education should be redesignated as the "Bureau of Education for Exceptional Persons," with a clear understanding that gifted and talented children are a priority target population of that redesignated bureau.
3. Wherever appropriate, the Commissioner-discretionary programs (EHA, Part C - Centers and Services to Meet the Special Needs of the Handicapped, Part D - Training Personnel for the Education of the Handicapped, Part E - Research in the Education of the Handicapped, Part F - Instructional Media for the Handicapped) should be expanded to include gifted and talented

children as an eligible target population along with handicapped children.

4. A new Part G should be created, providing for a modest program of grants to state and local education agencies for the development, operation, and improvement of programs and projects to meet the special educational needs of gifted and talented children (identical to one component of what has been previously authorized in ESEA Title IV, Section 404).
5. The current ESEA Title IV, Section 404, should be allowed to expire as well as the current Office of Gifted and Talented within BEH, since they would no longer be necessary because of the proposed enlarged scope of the BEH program. To maintain an internal advocacy force and to insure that the interests of the gifted and talented are properly represented, however, a new position needs to be established directly under and responsible to the head of the Bureau.
6. Where needed, authorization levels for EHA Parts C through F should be revised to conform to this enlarged mission on behalf of all exceptional children.

Why Action at the Federal Level?

Organizational and Personal Commitment

CEC has proposed these changes in federal legislation primarily for three reasons. First, and foremost, is the Council's basic commitment and responsibility to all exceptional children. CEC's official policy position in this regard is quite clear:

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It is the Council's belief that our nation must be morally and ethically committed to providing exceptional children and youth the programs they require to develop their potentials fully . . . The Council further believes that it is the responsibility of its members and all persons concerned about exceptional children and youth to assure realization of this development of potential. (CEC, 1976, p. 15)

CEC's 1971 Delegate Assembly also made it clear what the responsibilities of the Council and its members were concerning the education of gifted and talented children when it passed the following policy statements:

Special educators should vigorously support programs for the gifted as consistent with their concept of the need for special assistance for all exceptional children. (CEC, 1976, p. 34)

Special preparation is required for those educators who have specific responsibilities for educating the gifted . . . Such training should be recognized by appropriate certification in the case of teachers and should receive the general support of local, state, provincial, federal, and private interests. (p. 36)

Special model or demonstration programs should be established to illustrate to educators and others the kind and range of innovative program efforts that are possible for gifted students. (p. 36)

Research and development resources should be focused on the needs of the gifted in order to develop new methodologies and curricula and to allow educators and others to evaluate current and proposed methods. (p. 37)

The importance of optimal educational services for the gifted merits the spending of funds in appropriate amounts toward this end by all levels of government as well as by other sources. (p. 37)

Status of Delivery of Educational Services

Second, in addition to being philosophically and morally committed to obtaining optimal educational opportunity for all gifted and talented children, CEC also sees the need to take action at the federal level because of the current status of gifted and talented education. Having recently completed a nationwide assessment regarding the present nature, level, and delivery of services to our country's gifted and talented youth, CEC concluded that many of the issues and concerns raised by then US Commissioner of Education, Sidney

Marland, in his 1971 assessment of gifted and talented education have remained largely unchanged. According to his 1971 report to the Congress, Marland found:

Less than 15 percent of the States were spending any of their Title I funds to identify or to develop special programs to meet the needs of gifted and talented youngsters from deprived areas . . . only nine States had utilized Title V monies to strengthen their programs for these students . . . [and] only 20 percent of the States had used Title III monies for programs or services directed at the gifted and talented. (p. 49)

The Marland report illustrated that federal efforts to stimulate the development of gifted and talented programs through the use of unspecified appropriations did not directly benefit gifted and talented children. Furthermore, even though the Congress made a modest response to this condition in 1974 by passing Section 404 (the Special Projects Act) of Public Law 93-380 by which gifted and talented education became the direct recipient of a \$2.56 million appropriation, we still, as a nation, have not truly acknowledged the special educational needs of this vulnerable group of children.

Educational and Personal Consequences

A third reason why CEC has proposed changes in the current federal legislation is that there is a population of children in this country who will educationally as well as personally suffer if they do not receive the special education and related services they need.

As early as 1936, Shaffer described many of the educational and personal adjustments that gifted and talented children often had to make to even effectively participate in traditional educational settings:

The pupil of superior intelligence is . . . educationally maladjusted in the conventional school, for he is kept from progressing up to the potentialities of his ability . . . Compelled to sit through lessons that are boring to him, the gifted pupil may resort to day-dreaming and develop habits of seeking unreal satisfactions. The lack of necessity for effort leads to slipshod habits of work which prove embarrassing in later years when concentration is demanded. (p. 509)

Upon investigating the ramifications of boredom and frustration on the educational achievement of gifted and talented students,

Miner (1957) found that over half (54.6%) of the 251 gifted children he studied were working below the levels they were intellectually capable of. Even more startling was the fact that the majority of these individuals were at least four grade levels below where they could be working.

Closely related to problems of boredom and underachievement are the underaspirations and academic failure of many gifted and talented students. Project Talent, a longitudinal study of over 400,000 high school students begun in 1960, reported that over 13% of the gifted and talented students it investigated indicated they did not aspire to attend a college or post high school vocational training program. Moreover, slightly less than one-fifth of the parents of these college capable students likewise indicated they had any post high school educational aspirations for their children (Flanagan, 1964).

Even more distressing is the dropout rate of many gifted and talented students. Green (1962), conducting a statewide analysis of Iowa's high school dropouts, discovered that 3.5% of this population had IQ scores of 120 or more. In other words, nearly one-fifth or 17.6% of Iowa's gifted and talented students were not even finishing high school.

Why Call Them "Exceptional Children"?

Historical Precedence

Why change the present federal definition of handicapped (Education of the Handicapped Act, Part A, Section 602) to a definition of "exceptional," which includes gifted and talented children? To begin with, the majority of special educators have historically used the term exceptional in referring to children with special needs and likewise as practitioners, have perceived themselves as belonging to a profession committed to the education of all exceptional children.

Moreover, the inclusion of the gifted and talented within this definition is by no means a new phenomenon. Smith and Neisworth (1977) contend that overall the field of special education by 1950 had identified 12 categories of exceptional children of which the gifted and talented were considered 1 of the 12.

Early statements issued by the US Office of Education also set forth this juncture: "The concept of free public education for all chil-

dren admits of no exceptions," and "no state program of services for exceptional children is complete until it includes them all, with preference for none" (Martens, 1944). To further illustrate this point, it should be recalled that the first special education component within the US Office of Education (established in 1931) was called the Section on Exceptional Children and Youth (Weintraub, 1971).

Language and Rationale

A second reason for changing the present definition to exceptional is that both the language and rationale of the current federal definition for handicapped children is perfectly suited to achieving CEC's educational mission with respect to gifted and talented children. The revised definition of exceptional children, therefore, would look like this:

Exceptional children are defined as mentally retarded, hard of hearing, deaf, speech impaired, visually handicapped, seriously emotionally disturbed, orthopedically impaired, or other health impaired children with specific learning disabilities, or children who are gifted and/or talented, who by reason thereof require special education and related services.

It should be recalled that a major underlying premise of the existing federal definition is that it does not define all handicapped children, but rather is limited to those handicapped children "who by reason thereof require special education and related services." Precisely the same premise would be applied to gifted and talented children through their inclusion in this definition. Not necessarily all gifted and talented children would, therefore, be in the defined target population, but rather only those gifted and talented students, after appropriate comprehensive assessment, "who by reason thereof require special education and related services" to meet the unique educational needs.

National Trend

A final reason for changing the federal definition to exceptional children is because almost half of the states are already moving in this direction. There are at present 21 states that have included the gifted and talented in their statutory definition of exceptional children or use language that allows this to

be interpreted. For example, 14 states specifically mention gifted and talented children within their exceptional child definition. These states include Alabama, Alaska, Arizona, Connecticut, Florida, Georgia, Idaho, Kansas, Louisiana, Mississippi, North Carolina, North Dakota, Oklahoma, and West Virginia. Ohio, on the other hand, refers to these children as those in need of special education. South Carolina and South Dakota similarly define this population to be those children in need of special or prolonged assistance. Finally, 4 states, Hawaii, Kentucky, New Mexico, and Pennsylvania, use statutory language that allows for gifted and talented children to be interpreted as being included within their exceptional child population. New Mexico, as an example, uses the following definition to describe its exceptional children: " 'Exceptional children' means the children whose abilities render regular services of the public school to be inconsistent with their educational needs."

Why Change the Name of BEH?

CEC has suggested that the name of the Bureau of Education for the Handicapped (BEH) be changed to the Bureau of Education for Exceptional Persons (BEEP) for a number of reasons. Logically, if we think of special education as a means of meeting the needs of children with unique or special needs, be they handicapped or gifted, the delivery systems and organizations that represent their interests should likewise reflect this philosophy. Just as The Council for Exceptional Children represents the interests and needs of all exceptional children, so too should the Washington based bureau, which is largely responsible for our federal government's delivery and monitoring of these services.

This was clearly the legislative intent of the Congress when it suggested that the Office of Gifted and Talented be placed within this bureau. To do otherwise is to move away from the exceptional child concept and would mean either the duplication of many existing delivery systems and services or the creation of totally new systems, which is a most difficult task.

Further, by initiating this change at the national level, it would reflect the federal government's endorsement of the exceptional child concept, as well as serve as an example

to state and local education agencies as they continue to develop mechanisms toward meeting the individual needs of all children, regardless of their exceptionality or ability to perform.

Why Inclusion in the Commissioner-Discretionary Programs?

Assuming that many people do not know what the Commissioner-discretionary programs are, CEC is suggesting that gifted and talented children be included in Parts C-F of the Education of the Handicapped Act. These parts include: Part C, Centers and Services to Meet the Special Needs of the Handicapped; Part D, Training Personnel for the Education of the Handicapped; Part E, Research in the Education of the Handicapped; and Part F, Instructional Media for the Handicapped.

It should be remembered that CEC's policy statements regarding the education of the gifted and talented, which were presented earlier in the article, have called for the establishment of more teacher training, greater numbers of model and demonstration projects, and an increase in gifted and talented research and development programs. In examining the Commissioner-discretionary programs presented in Table 1, it should be noticed that the financial base and delivery system for many of these services have already been established. While it would not be appropriate to include gifted and talented children in all of the Commissioner-discretionary programs, it would certainly be appropriate to include them in most of the major components. For example, there are 10 regional resource centers presently operating that provide for the development of demonstration models, for the training of state educational personnel and for the dissemination of information for the handicapped.

Why expend vast amounts of energy and financial resources to establish similar but separate centers for the gifted and talented? With simple adjustments, these centers could easily be modified to focus on the needs of all exceptional children. Existing early childhood programs for the handicapped could include either separate programs for the gifted and talented or joint programs for preschool exceptional children. In the same light, many of the present teacher training as well as research and development projects already

TABLE 1
The Commissioner-Discretionary Programs
Education of the Handicapped Act
Parts C-F

<i>Program</i>	<i>Fiscal year 1978 appropriation</i>	<i>Purpose</i>
Part C - Centers and Services to Meet the Special Needs of the Handicapped		
Regional Resource Centers	\$ 9,750,000	To establish 13 regional resource centers to provide advice and technical assistance to educators for improving the education of the handicapped. Approximately half of this funding is used in support of demonstration models, training of state education agency personnel, and for the dissemination of information to encourage appropriate state appraisal and educational programming for handicapped children.
Deaf-Blind Centers	16,000,000	To establish 10 regional centers for the deaf-blind.
Early Childhood Educational Programs	22,000,000	To establish early childhood demonstration projects and exemplary services that may be potentially replicable on a nationwide basis.
Vocational, Adult, and Postsecondary Programs	2,400,000	To provide vocational, technical, postsecondary, adult, and career education opportunities for deaf and other handicapped persons.
Part D - Training Personnel for the Education of the Handicapped	45,375,000	To train educational personnel to meet the needs of severely handicapped children; to train minority group specialists to serve the educational needs of minority group handicapped children; to train personnel for early childhood programs; to train paraprofessionals; to train personnel to provide vocational education for the handicapped; and to train regular classroom teachers to meet the needs of handicapped children in regular classroom situations.
Part E - Research in the Education of the Handicapped	20,000,000	To support research and development activities to improve educational opportunities for the handicapped. Current funds are distributed as follows: (a) early childhood education, (b) full school services, (c) career education, (d) severely handicapped, (e) personnel development, and (f) child advocacy.
Part F - Instructional Media for the Handicapped	19,000,000	To develop educational and training films as well as other educational media for the handicapped.
Total fiscal year 1978 appropriations, Parts C-F	\$134,525,000	

serving a variety of target populations, as shown in Table 1, could also be easily modified to include the gifted and talented.

Besides easy program accessibility, however, the fiscal considerations of such a joint venture should be considered. At present, the US Office of Gifted and Talented is appropriated \$2.56 million to carry out such activities. The Commissioner-discretionary programs, on the other hand, have received a fiscal year 1978 appropriation in excess of \$134 million.

It should be understood, however, that while CEC is advocating for the inclusion of gifted and talented children under the Commissioner-discretionary programs (Parts C-F of the Education of the Handicapped Act), this does not include Part B of the Act, better known as the Education for All Handicapped Children Act of 1975, Public Law 94-142.

Why Do Away With the Office of Gifted and Talented?

With the establishment of the exceptional child concept, there would no longer be a need for a separate Office of Gifted and Talented within BEH. Instead, what would be needed is a number of active professionals or internal advocates within each of the respective divisions and branches of the Bureau (e.g., a person within the research division who would insure that the interests of gifted and talented students were recognized within a variety of exceptional projects as well as research projects related specifically to the gifted and talented.)

Further, CEC would maintain that a new position be established directly under and responsible to the head of the Bureau. Such a position would insure that the interests of the gifted and talented were being adequately represented on a Bureau-wide basis. In essence, therefore, although CEC is advocating for phasing out the present Office of Gifted and Talented, it is doing so in order that the interests of gifted and talented children become expanded throughout the total organizational structure of the Bureau as well as in the projects and programs it presently funds.

Conclusion

The Council for Exceptional Children has submitted the foregoing recommendations to

the Congress for at least the following reasons:

1. Most importantly, too many gifted and talented children are suffering from neglect that derives from the failure to provide the special educational support required to meet their unique learning needs.
2. These recommendations result from the long standing official policies of CEC.
3. The current status of the delivery of educational services to this population is unacceptable.
4. Historically CEC members have perceived themselves as educational practitioners belonging to a profession committed to the education of all exceptional children, handicapped and gifted.
5. The exceptional child approach is already clearly the direction being taken in numerous states.
6. Implementation of these recommendations would avoid both the duplication of many existing delivery systems and the impossible task of creating wholly new delivery systems nationwide.
7. The existing federal legislative and programmatic structures for the education of handicapped children can efficiently and expeditiously accommodate the needs of gifted and talented children.

The Congressional forum for deliberation with respect to these recommendations will occur during the early months (winter and spring) of the 1978 Congressional session. The precise legislative vehicle will be the amending process that will occur during the complicated course of reauthorization of the entire federal Elementary and Secondary Education Act. CEC members and other concerned professionals may want to share their concerns for the future of these CEC recommendations during the next few weeks.

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